

WATER AND WASTEWATER
OPERATOR CERTIFICATION REGULATIONS



Rules
of the
Territory of Guam
Board of Certification
for the
Certification of Water and Wastewater
System Operators

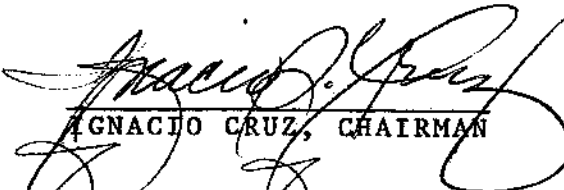


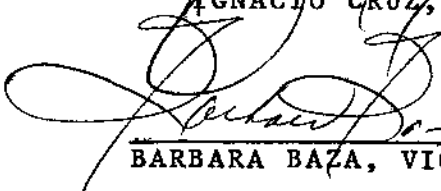
GUAM ENVIRONMENTAL PROTECTION AGENCY

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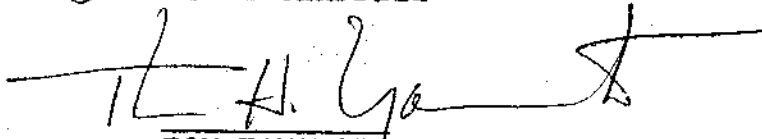
WATER AND WASTEWATER

OPERATOR CERTIFICATION REGULATIONS



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BARBARA BAZA, VICE-CHAIRLADY


JOSEPH CAMPBELL


TOM YAMAMOTO


ROCELIO BAUTISTA


VICENTE QUITORIANO


ISAAC IKEHARA

September 25, 1978

"ALL LIVING THINGS OF THE EARTH ARE ONE"

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CHAPTER ONE

AUTHORITY

Section 57238 of Chapter X, Title LXI, of the Government Code of Guam authorizes and directs the Administrator, with the approval of the Board of Certification, to promulgate rules and regulations necessary to implement the Water and Wastewater Operators Certification Act, which became effective on May 31, 1977.

CHAPTER TWO

PURPOSE

- 2.1 The purpose of the operator certification program is to promote the improvement and certify the ability of personnel engaged in water and wastewater system operation and thereby reduce the hazards to public health and protect the water resources and the large investments made in water and wastewater systems in the Territory.
- 2.2 The purpose of these regulations is to provide criteria and procedures by which personnel in the water and wastewater fields may be examined, rated and certified.

CHAPTER THREE

DEFINITIONS

- 3.1 "Administrator" means the Administrator of the Guam Environmental Protection Agency, or his delegated representative.
- 3.2 "Association of Boards of Certification (ABC)" means the existing nationally recognized advisory association for the certification of operating personnel in water and wastewater utilities.
- 3.3 "Board of Certification" means the Board of Directors of the Guam Environmental Protection Agency.
- 3.4 "Certificate" means a certificate of competency issued by the Administrator or his delegated representative for a specific classification of the certification program.
- 3.5 "Direct-Responsible-Charge" means:
- (a) In smaller facilities where shift operation is not required, active daily on-site charge and performance of operation, or
 - (b) In larger facilities where shift operation is required, both (1) active daily on-site technical direction and supervision, and (2) active daily on-site charge of an operating shift, or a major segment of a system or facility.

- 3.6 "Operator" means the person in direct-responsible-charge of the operation of a potable water supply system or wastewater facility, or a major segment of a system or facility.
- 3.7 "Person" means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, municipality, or any other political subdivision of this territory, any interstate body, any other legal entity or federal facility.
- 3.8 "Potable Water Supply System" means the system of pipes, structures, and facilities through which water is obtained, treated and sold, distributed or otherwise offered to the public for household use or any use by humans.
- 3.9 "Water Distribution System (WD)" means that portion of the potable water supply system in which water is stored and conveyed from the water treatment plant or other supply points to the premises of a consumer.
- 3.10 "Water Treatment Plant (WT)" means that portion of the potable water supply system which in some way alters the physical, chemical, or bacteriological quality of the water being treated.
- 3.11 "Wastewater Collection System (WWC)" means that portion of the wastewater facilities in which wastewater is received from the premises of the dischargers and conveyed to the point of treatment or discharge.

3.12 "Wastewater Treatment Plant (WWT)" means that portion of the wastewater facility used in the treatment of domestic and/or industrial wastewater, including solids handling.

CHAPTER FOUR

CLASSIFICATION OF WATER AND WASTEWATER FACILITIES

- 4.1 A point system will be utilized to classify water and wastewater systems in order to fairly administer the provisions of this program and to establish the level of certified operators needed for proper operation of the program.
- 4.2 Each facility will be classified as one of four classes from the lowest of I to the highest of IV according to the complexity of the system and the operation and management skills required.
- 4.3 The classification for water supply systems shall be as shown in Table 1.

Table 1

Guam Water Supply System Classification

System	Units	I	II	III	IV
Water Distribution (WD)	Population Served	1500 or less	1501-15,000	15,001-50,000	50,001 or more
Water Treatment (WT)	Range of Points	30 or less	31-55	56-75	76 or more

The form shown in Table 3 shall be used to determine the WT points.

4.4 The classification for wastewater systems shall be as shown in Table 2.

Table 2. Guam Wastewater System Classification

System	Units	I	II	III	IV
Wastewater Collection (WWC)	Population Served	1500 or less	1501-15,000	15,001-50,000	50,001 or more
Wastewater Treatment (WWT)	Range Points	30 or less	31 to 55	56 to 75	76 or more

The form shown in Table 4 shall be used to determine the WWT points.

4.5 The Administrator shall classify water and wastewater systems and change the classification of a particular system when there are unusual factors affecting the complexity of unit processes, quality of the source or potential health hazards.

4.6 Upon a determination of classification or upon a reclassification of a particular system, the Administrator shall issue a certificate of such determination to the owner and operator. The owner shall display the certificate of classification or a facsimile thereof in a prominent place in the plant, or for a distribution system, in a prominent place in the office of the operator-in-charge or in the work area.

4.7 Upon a reclassification of a particular system to a higher classification than its previous classification, the owner and operator of the system shall be notified of such reclassification by the Administrator. The operator may

apply for reclassification to an operator classification equivalent to the system or facility as reclassified, prior to a date twelve months after such notification. The operator in direct-responsible-charge of the system shall obtain the proper certification level, or be replaced by an operator certified at the appropriate classification level, prior to expiration of the said twelve-month period.

TABLE 3

CLASSIFICATION OR WATER TREATMENT PLANTS (WTP)

FACILITY-CLASS	I.	II.	III.	IV.
RANGE OF POINTS	30 or Less	31-55	56-75	76 or Greater

Assign points for every item that applies as follows:

Items	Points	
• <u>Maximum population served, peak day</u>	1 pt. per 10,000 or part (max. 10 points)	_____
• <u>Design flow</u> (avg. day) or peak month's production (avg. day) whichever is larger.....	1 pt. per MGD or part (max. 10 points)	_____
• <u>Water Supply Source</u>		
Groundwater.....	3	_____
Surface water.....	5	_____
Average raw water quality (good to poor).....	0-10*	_____
• <u>Adjustment**</u>		
Aeration for CO ₂	2	_____
pH adjustment.....	4	_____
Stability or corrosion control	4	_____
Taste and odor control.....	8	_____
Color control.....	4	_____
• <u>Treatment**</u>		
Iron or Iron/Mn. removal.....	10	_____
Ion exchange softening.....	10	_____
Chemical precipitation softening.....	20	_____
Coagulation-flocculation-sedimentation.....	15	_____
Filtration.....	10	_____
Reverse osmosis, electro-dialysis, desalination, etc...	15	_____
In-plant treatment of plant sludge.....	6	_____
Fluoridation.....	5	_____
• <u>Disinfection</u>		
Chlorination or comparable.....	5	_____

On-site generation of disinfectant.....

5

• Laboratory Control by Plant Personnel

Bacteriological (complexity)...

0-10*

Chemical/physical (complexity).

0-10*

TOTAL***.....

* See Table 3a

TABLE 3a

WATER TREATMENT PLANT CLASSIFICATION
VARIABLE POINT GUIDE

Variation in Raw Water Quality..... 0-10

The key concept is the variation or change in the quality of the raw water source. Suggested point values are:

- Little or no variation; no treatment provided except chlorination. 0
- Raw water quality (other than turbidity) varies enough to require treatment changes approximately 10 percent of the time. 2
- Raw water quality (turbidity) varies severely enough to require pronounced and/or very frequent treatment changes. 5
- Raw water quality subject to periodic serious industrial waste pollution. 10

Laboratory Control by Plant Personnel..... 0-10

Bacteriological/biological (complexity)

The key concept is to credit bacti/bio lab work done on-site by plant personnel. Suggested point values are:

- Lab work done outside the plant. 0
- Membrane filter procedures. 3
- Use of fermentation tubes or any dilution method for coliform determination. 5
- Biological identification. 7
- Virus studies or similarly complex work conducted on-site. 10

Chemical/physical (complexity)..... 0-10

The key concept is to credit chemical/physical lab work done on-site by plant personnel. Suggested point values are:

- Lab work done outside the plant. 0
- Push button or colorimetric methods for simple tests such as chlorine residual, pH. 1-3
- Additional procedures such as titration, jar tests, alkalinity, hardness. 4-5

- More advanced determinations such as numerous inorganics. 6-7
- Highly sophisticated instrumentation such as atomic absorption and gas chromatography. 10

TABLE 4

CLASSIFICATION OF WASTEWATER TREATMENT PLANTS (WWT)

FACILITY-CLASS	I	II.	III.	IV.
RANGE OF POINTS	30 or Less	31-55	56-75	76 or more

Assign points for every item that applies:

Item	Points	
<u>Maximum population equivalent (P.E.) served, peak day</u>	1 pt. per 10,000 P.E. or part (max. 10 points)	_____
<u>Design flow (avg. day) or peak month's flow, (avg. day), whichever is larger</u>	1 pt. per MGD or part (max. 10 points)	_____
<u>Effluent Discharge</u>		
Receiving stream (sensitivity).....	2-6*	_____
Land disposal-evaporation.....	2	_____
Subsurface disposal.....	4	_____
<u>Variation in Raw Wastes (slight to extreme).....</u>		
	0-6*	_____
<u>Pretreatment</u>		
Screening, comminution.....	3	_____
Grit removal.....	3	_____
Plant pumping of main flow.....	3	_____
<u>Primary Treatment</u>		
Primary clarifiers.....	5	_____
Combined sedimentation/digestion.....	5	_____
Chemical addition (except chlor.)	4	_____
<u>Secondary Treatment</u>		
Trickling filter w/sec. clarifiers.....	10	_____
Activated sludge w/sec. clarifiers (including ext. aeration and oxidation ditches).....	15	_____
Stabilization ponds without aeration.....	5	_____

Aerated lagoon.....	8	_____
<u>Advanced Waste Treatment</u>		
Polishing pond.....	2	_____
Chemical/physical-without secondary.....	15	_____
Chemical/physical-following secondary.....	10	_____
Biological or chemical/ biological.....	12	_____
Ion exchange.....	10	_____
Reverse osmosis, electrodialysis.....	15	_____
Chemical recovery, carbon regeneration.....	4	_____
<u>Solids Handling</u>		
Thickening.....	5	_____
Aerobic Digestion.....	6	_____
Anaerobic digestion.....	10	_____
Evaporative sludge drying.....	2	_____
Mechanical dewatering.....	8	_____
Solids reduction (incineration, wet oxidation).....	12	_____
<u>Disinfection</u>		
Chlorination or comparable.....	5	_____
On-site generation of disin- fectant.....	5	_____
<u>Laboratory Control by Plant Personnel</u>		
Bacteriological (complexity)...	0-10*	
Chemical/physical (complexity)..	0-10*	
TOTAL**.....		_____

* See Table 4a

** If unique treatment plant conditions distort the point total, the certification board should adjust the facility classification.

TABLE 4a

WASTEWATER TREATMENT PLANT CLASSIFICATION
VARIABLE POINT GUIDE

Effluent Discharge

Receiving stream sensitivity..... 0-6

The key concept is the degree of dilution provided under low flow conditions. Suggested point values are:

- "Effluent limited segment" in EPA terminology; secondary treatment is adequate. 1
- More than secondary treatment is required. 2
- "Water quality limited segment" in EPA terminology; stream conditions are very critical (dry, run, for example) and a very high degree of treatment is required. 3
- Effluent used in a direct recycle and reuse system. 6

Variation in Raw Wastes (slight to extreme)..... 0-6

The key concept is frequency and/or intensity of deviation or excessive variation from normal or typical fluctuations; such deviation can be in terms of strength, toxicity, shock loads, I/I, etc. Suggested point values are:

- Variations do not exceed those normally or typically expected. 0
- Recurring deviation or excessive variations of 100 or 200 percent in strength and/or flow. 2
- Recurring deviations or excessive variations of more than 200 percent in strength and/or flow. 4
- Raw wastes subject to toxic waste discharges. 6

Laboratory Control by Plant Personnel

Bacteriological/biological (complexity)..... 0-10

The key concept is to credit bacti/bio lab work done on-site by plant personnel. Suggested point values are:

- Lab work done outside the plant. 0

- Membrane filter procedures. 3
- Use of fermentation tubes or any dilution method; fecal coliform determination. 5
- Biological identification. 7
- Virus studies or similarly complex work conducted on-site. 10

Chemical/physical (complexity)..... 0-10

The key concept is to credit chemical/physical lab work done on-site by plant personnel. Suggested point values are:

- Lab work done outside the plant. 0
- Push-button or visual methods for simple tests such as pH, settleable solids. 1-3
- Additional procedures such as DO, COD, BOD, gas analysis, titrations, solids, volatile content. 4-5
- More advanced determinations such as specific constituents: nutrients, total oils, phenols, etc. 6-7
- Highly sophisticated instrumentation such as atomic absorption and gas chromatography. 10

CHAPTER FIVE

OPERATOR CERTIFICATION QUALIFICATIONS

- 5.1 All potable water supply systems and wastewater facilities whether publicly or privately owned, used or intended for use by the public or private persons, must at all times be under the direct supervision of an operator whose competency is certified to by the Administrator in a classification at least equal to the classification of the system or facilities to be supervised.
- 5.2 The criteria for award of operator certification shall be a combination of education, experience and results of a formal certification examination.

The minimum education and experience requirements shall be as indicated in Table 5. Each plant or system shown in Table 1 or 2 shall have at least one individual certified at the same numerical level or higher as the system or plant classification. For example, a class 3 wastewater plant must have at least a class 3 wastewater treatment plant operator in direct-responsible-charge.

TABLE 5

MINIMUM EDUCATION AND EXPERIENCE REQUIREMENTS (YEARS)
FOR EACH OPERATOR CLASS

Operator Class	OIT		1		2		3		4	
	Ed.	Exp.	Ed.	Exp.	Ed.	Exp.	Ed.	Exp.	Ed.	Exp.
WWC	12	.25(a)	12	1	12	3	14	4	16	4
WWT	12	.25(a)	12	1	12	3	14	4(b)	16	4(b)
WD	12	.25(a)	12	1	12	3	14	4	16	4
WT	12	.25(a)	12	1	12	3	14	4(b)	16	4(b)

(a) Operator-in-Training (OIT): Three months of operating experience or 36 classroom hours of specialized and related training. Operating experience shall be the time spent at a plant in satisfactory performance of duties related to actual operation of the plant (i.e. secretarial or janitorial duties are not to be counted as operating experiences.)

(b) Class 3 or 4 WWT and WT require that one half of the minimum experience requirement shall be responsible-charge experience. Responsible charge experience shall be the time in charge of operating shift or a major segment of a plant at a level no lower than the next lower class.

5.3 Education Requirements

Education requirements are shown in Table 5. They may be fulfilled completely by formal education or by high school education plus equivalent substitutions.

- a. High School: High School Diploma, GED or other equivalent is the minimum requirement without substitution for all classes. Operators already employed before the effective date of these regulations are exempt from this requirement, and may substitute years of experience obtained in excess of the number required, for years of high school education.
- b. College: Two years of college in engineering, chemistry, biology and related fields, or education equivalent are necessary for Class III operators. A college degree or college education equivalent in the above courses is necessary for Class IV operators.
- c. Substitution of special courses and experience may be made for college education in accordance with Section 5.5.

5.4 Experience Requirements

- a. Experience requirements are shown in Table 5.
- b. Substitutions shall be in accordance with Section 5.5.

5.5 Experience and Education Equivalency

- a. Years of experience obtained in excess of those required in Table 5 may be substituted for years of college education on a 1 to 1 basis, and vice versa, but no more than fifty (50) percent of an experience requirement may be filled by substitution, and no experience can be substituted for high school education (12 years) except by operators employed before the effective date of these regulations.

Examples:

- If Level II requires 12 years of education and 3 years experience, a person with a college degree (16 years education) but no experience cannot qualify, because only 50% of the experience can be substituted. However, a person with one year college plus 2 years experience can qualify by substituting one year of college for the needed one year of experience.
- For level III, which requires 2 years college plus 4 years experience, a person with High School plus 6 years experience may substitute 2 years of experience for the 2 years of college and qualify, while a person with High School plus 4 years experience cannot substitute any experience, because it is not "excess"; 4 years

are required, and he has no extra years to substitute.

- b. Specialized operator training courses, Seminars and approved technical conferences with assigned continuing education units (CEU's) can be substituted for formal college education requirements, with the following equivalence:

10 classroom hours = 1 CEU

1.5 CEU = 1 semester hour

30 semester hours = 1 year of formal
education

CHAPTER SIX

APPLICATIONS, EXAMINATIONS AND ISSUANCE OF CERTIFICATES

6.1 Application for Examination

- a. Applicants shall submit an application in writing to the Administrator on the appropriate form at least thirty (30) days prior to the date the examination is scheduled. Applicants found to have submitted incorrect information may be rejected for certification at the discretion of the Administrator. In unusual circumstances the 30 day period may be waived by the Administrator.
- b. No applicant will be administered the examination who does not possess the qualifications required by Chapter 6. H-2 alien applicants may take the exam provided they can show proof from the Immigration Department, Department of Labor, or other federal agencies that they will be eligible for

employment should they become certified.

- c. The Administrator shall assemble and review all information and documents needed to determine eligibility of the applicant for examination and notify him of his status.
- d. All fees as set forth in Chapter Nine shall accompany the completed application form.

6.2 Examinations

- a. Examinations shall be prepared for each designated class of system shown in Tables 1 and 2, and examinations will be developed as per guidelines established by the Association of Boards of Certification.
- b. There shall be at least one examination and preferably two, to be held each year for the purpose of examining candidates for certification at a time and place designated by the Administrator.
- c. Applicants who fail to receive a passing grade may not repeat that examination for a period of six (6) months.
- d. A grade of 70 percent or higher shall be considered passing for Classes I and II, and 85 percent for Class III and IV operators. In the case of Class IV candidates, an oral interview may also be required.

- e. All examinations will be graded by the Administrator and the applicant notified of the results directly. Papers will not be returned to the applicant.

6.3 Issuance of Water and Wastewater Certificates

- a. Upon satisfactory fulfillment of the requirement provided herein, the Administrator shall issue a suitable certificate designating the applicant's competency and indicating the class of system and/or facility which the applicant is qualified to operate.
- b. Certificates of operators who terminate their employment at a water or wastewater system shall remain valid for the unexpired term of the certificate. Operators whose certificates expire under this Section may upon application to the Administrator, be issued new certificates of a like certification upon payment of a reissuance fee and compliance with section 7.1 of these regulations.

CHAPTER SEVEN

RENEWAL, RECIPROCITY AND REVOCATION OF OPERATOR CERTIFICATES

- 7.1 Renewal of operator certificates. All certificates shall be valid for a period of three (3) years upon fulfillment of the requirements provided in these regulations. Applications for renewal of certificates shall be made in writing to the Administrator on the appropriate application form at least one (1) month prior to expiration of the certificate. Completion of refresher courses in the operator's field is encouraged. Reexamination may be required at the Administrator's discretion upon concurrence by the Board.
- 7.2 Reciprocity of operator certificates. The Administrator may issue a certificate of an equal or lower class without examination to a person who holds a certificate in any state, territory or possession of the United States of America, or any other country, provided the requirements for certification of operators under which the performance certificate was issued do not conflict with provisions of these regulations and that reciprocity privileges are granted to Guam operators.
- 7.3 Revocation of operator certificates
- a. The Administrator shall cause written notice of certification revocation to be served upon any operator who the Administrator believes has practiced fraud or deception or is guilty of gross

negligence or misconduct in the performance of his duties or is incompetent or unable to properly perform his duties. The notice shall specify the reasons for revocation and state that the operator may request a hearing before the Board not later than thirty (30) days after the date of the notice.

- b. The Administrator may revoke the certificate of any operator upon the showing of good cause.
- c. Appeals to the decision may be made as per Chapter Nine, Section 9.2(a).

CHAPTER EIGHT

FEEES

8.1 Fees for certification shall be as follows:

Application for examination	\$ 15.00
Re-examination resulting from failure to pass an examination	15.00
Renewal of certificate (every 3 years)	15.00
Reinstatement or reciprocity certificate	15.00

- 8.2 Fees from applicants rejected for examination will be returned to them.
- 8.3 Fees shall be paid by check or money order payable to the Treasurer of Guam and submitted to the Administrator.
- 8.4 Fees from applicants who fail the examination will not be returned.

CHAPTER NINE

PENALTIES AND APPEALS

- 9.1 Penalties. Any person who violates any provision of these regulations or who knowingly and willfully operates a system required to be certified under these regulations without the proper certification or who knowingly makes any false statements, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under these Regulations shall be punishable under Section 57241 of the Water and Wastewater Operators Certification Act, P.L. 14-31.
- 9.2 Appeals
- a. Persons aggrieved by actions of the Administrator pursuant to these regulations may appeal to the

Board within fifteen (15) days of written notice of such action as per the Administrative Adjudication Law.

- b. Persons aggrieved by actions of the Board pursuant to these regulations may appeal such action to the Superior Court of Guam within thirty (30) days from said Board Action as per the Administrative Adjudication Law.
- c. Enforcement and appeals hearings will be conducted according to procedures adopted by the GEPA Board.

CHAPTER TEN

SEVERABILITY

If any provision of these Regulations, or its application to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances, and the remainder of these Regulations, shall not be affected thereby.