

## Overview

The Training Division of Metro Water Services (MWS) is responsible for providing employees with training classes in three areas: technical training, skills training and safety training.

- With regard to the Technical Training Program, MWS provides soft skills technical training to its employees on employment law and career development related topics, along with training necessary for compliance on Executive Orders initiated by the Mayor. Classes that are mandatory through Executive Order include: Diversity, Sexual Harassment (for supervisors and employees), Substance Abuse, and Computer Ethics. A record of technical training and other classes taken by employees is maintained by the MWS Training Division. Below is an example of an employee's training record.

PeopleSoft 7.5  
Individual Employee Training

Report ID: WSTRN202  
EmpId: 000000 Employee, Water Page No: 1

Course Code	Title	Session	Start Date	Internal/External	Training Reason	CEUs
MNWEMP	New Employee Orientation/Metro	0850	2/24/1993	Internal	Develop	0.30
CNFSPA	Confined Space	0007	6/8/1993	Internal	Enrichment	
CPR	Cent. Publ. Resp. - First Aid	0069	6/10/1993	Internal	Enrichment	
BKSUPT	Back Support Program	0001	11/4/24/1993	Internal	Job Requrt	
SA-S	Substance Abuse - Supervisor	0003	2/1/1994	Internal	Job Requrt	
SA	Substance Abuse Training	0013	2/14/1996	Internal	Job Requrt	
DIVERS	Diversity	0844	7/22/1997	Internal	Job Requrt	0.40
EFTSUP	Effective Supervisory Practice	0883	12/8/1997	Internal	Job Requrt	2.00
WKPLVI	Workplace Violence	0008	2/23/1998	Internal	Job Requrt	0.30
CNFSPA	Confined Space	0044	3/9/1998	Internal	Job Requrt	
PERSEQ	Personal Protective Equipment	0004	3/9/1998	Internal	Job Requrt	
RTKNOW	Right To Know	0025	3/9/1998	Internal	Job Requrt	
CMMS	Computer Maint Mgmtment System	0011	5/21/1998	Internal	Job Requrt	
LASALN	Laser Alignment	0008	7/7/1998	Internal	Job Requrt	
CPR	Cent. Publ. Resp. - First Aid	0116	8/18/1998	Internal	Compliance	
DDC4	Defensive Driving Four	0100	8/25/1998	Internal	Compliance	
GENSAF	General Safety	0013	8/27/1998	Internal	Compliance	0.80
FACILI	Facilitation Skills Workshop	0002	8/24/1999	Internal	Skill	
RMP	Risk Management Program	0035	2/10/2002	Internal	Compliance	
VIBRAY	Vibration Analysis	0016	3/7/2002	Internal	Job Requrt	0.40
ODRCON	Order Control	0001	4/20/2002	Internal	Enrichment	
EMPF2	Employee Feedback Session 2	0001	10/6/2002	Internal	Job Requrt	
EMPF2	Employee Feedback Session 2	0002	10/6/2002	Internal	Job Requrt	
EFORMR	E-Form for Requisitions	0024	1/17/2003	Internal	Job Requrt	
CSOTRN	CSO Training	0001	2/2/2003	Internal	Job Requrt	
TECHTR	Technology Transfer	0001	2/2/2003	Internal	Job Requrt	
RTKNOW	Right To Know	0061	2/7/2003	Internal	Job Requrt	
TECHTR	Technology Transfer	0002	3/2/2003	Internal	Job Requrt	
CPMWKS	Change Pubum. Mgnt. Workshop	0040	8/15/2003	Internal	Skill	
CPMWKS	Change Pubum. Mgnt. Workshop	0041	8/16/2003	Internal	Skill	
CHLOR2	Chlorine 2	0001	1/23/2004	Internal	Compliance	
CNFSPA	Confined Space	0100	1/23/2004	Internal	Compliance	

- The Skills Training Program is necessary for employees in order for them to be successful in their jobs as technologies, procedures and equipment changes. Much of the skills training done at MWS is conducted by outside vendors or in-house through hands on training. Skills training is very important

organizationally, as many of the sewer processes that are associated with CMOM are addressed through skills training. As employees ascend through the ranks, their level of training increases. In many instances, before an employee can perform duties in a higher classification they must be fully trained through the Skills Training Program. Below is a list of skills classes that employees throughout MWS have attended to hone their on the job abilities in sewer or to attain various licenses associated with the sewer system.

### **Classes Required for License/Certification**

#### **Wastewater Treatment:**

##### **Introduction to Wastewater Treatment**

Duration: 10 days

Textbook(s): *Operation of Wastewater Treatment Plants, Vol. 1 and Vol. 2 (California State University at Sacramento)*

##### **Advanced Wastewater Treatment**

Duration: 5 days

Textbook(s): *Operation of Wastewater Treatment Plants, Vol. 1 and Vol. 2; Advanced Waste Treatment (California State University at Sacramento)*

##### **Applied Math for Water Treatment 3 and 4 Operators**

Duration: 5 days

Textbook(s): None; *suggested reference - Applied Math for Water Plant Operators Textbook and Workbook (CRC Press, LLC)*

##### **Intermediate Wastewater Treatment Laboratory Workshop**

Duration: 10 days

Textbook(s): None

*\*This class requires prior completion of 1002: Basic Water and Wastewater Laboratory Workshop (or equivalent).*

##### **Collection System:**

##### **Grade 1 and 2 Collection Systems**

Duration: 4½ days

Textbook(s): *Operation and Maintenance of Wastewater Collection Systems, Vol. 1 and Vol. 2 (California State University at Sacramento)*

##### **Commercial Driver's License**

##### Knowledge Tests

- *General knowledge*
- *Air brakes*
- *Combination vehicles*
- *Passenger transport*
- *School bus*
  
- *Hazardous materials*

- *Tanker*
- *Doubles/Triples*

Skills Tests

- *Pre-trip vehicle inspection*
- *Basic vehicle control*
- *On-road*

<b>License/Certification</b>	<b>Total</b>	<b>Recertification Requirements</b>
* Grade 4 Wastewater Treatment	52	12 Hours Every 3 Years
** Grade 2 Wastewater Collection System	7	6 Hours Every 3 Years
*** Commercial Driver’s License	147	Renewed Every 5 Years

\* A Grade 4 Wastewater Treatment license is required in order for an employee to legally operate the function of water/wastewater treatment in a facility.

\*\* An employee that has received a Grade 2 Wastewater Collection System license is responsible for the treatment process that occurs outside of a treatment facility in the field.

\*\*\* The following classifications may require a Commercial Driver’s License at Metro Water Services:

- *Equipment Operator 2, Equipment Operator 3, Industrial Mechanic 1, Industrial Mechanic 2, Industrial Electrician 1, Industrial Electrician 2, Industrial Technician Master, Water Maintenance Leader 1, Water Maintenance Leader 2, Maintenance Leader 1, Maintenance Leader 2, Industrial Maintenance Supervisor 1, Industrial Maintenance Supervisor 2.*

An employee must hold a Grade IV license to be eligible for the following classifications:

- *\*Treatment Plant Technician 3, Treatment Plant Shift Operator, Treatment Plant Shift Supervisor, Treatment Plant Assistant Manager, Treatment Plant Manager, Treatment Plant Superintendent, Water Services Assistant Director—Operations.*

In order to attain a Grade IV license, employees must pass the \*\*Grade IV Exam provided by the State of Tennessee.

\* *Employees may target (be automatically elevated) to the classification of Treatment Plant Technician 3 once they have passed the Grade IV exam. An employee may not target to the remaining classifications.*

\*\* *The Grade IV exam tests candidates on wastewater treatment theory, regulations and operator mathematics.*

**In-House Training Classes and Requirements**

Many of our employees must complete a series of in-house training courses in order to be eligible to promote or target up to a higher classification within their job family. Essentially, a Water Maintenance Technician 1 can promote or target up to a Water Maintenance Technician 2 upon completion of a prescribed series of courses. Confirmation of completion for each course is achieved when the course is signed off by the employee’s supervisor, the department head and reviewed by the Training Coordinator. Please note that although most classifications at MWS do not target,

several of the classifications that have direct involvement with CMOM related activities within the department do. Those classifications are as follows:

- Water Maintenance Technician 2, Water Maintenance Technician 3, Industrial Mechanic 2, Industrial Electrician 2, Industrial Electronics Technician 2, Industrial Technician Master.

The entry level classification or the “1” of the classifications listed above was excluded because an employee has limited or no knowledge about of the field in which they are working upon starting with the organization. Their knowledge base is developed through the prescribed training curriculum for their respective classification so that they may acquire the necessary skill to move up in their classification through targeting. Below is an example of the form used to track each employee’s progress in their respective targeted classification.

**Water Maintenance Technician 2 Requirements**

<b>1 years experience as a Water Maintenance Tech 1 for Tech 2</b>	<b>Lead Initials</b>	<b>Date Completed</b>	<b>IMS Initials</b>	<b>Date Reviewed</b>	<b>Comments</b>
<b>Subject-Matter Training</b>					
<b>Repair</b>					
(1) Hand Tools					
(2) Pneumatic and Hydraulic Tools					
(3) Fittings					
(4) Repair--Water/Sewer					
(5) Landscaping					
(6) Basic Masonry					
(7) Tapping machine (set up and usage)					
(8) Map reading--Example: Handy Map					
<b>Water Maintenance</b>					
(1) Fire Hydrant Maint (basic operation & color coding system)					
(2) Valve Operation Tools					
(3) Sounding Equip & Metal Detectors					
<b>Sewer Maintenance</b>					
(1) Confined Space					
(2) Manholes/Sewer Mains/Services					
(3) Jet Vactor, Hydraulic & Rod Trucks, Bucket Machines					
(4) Boom/Crane Truck Operations (basic knowledge)					
(5) CCTV equipment & crawlers (basic set up and maintenance)					
(6) Monitoring Devices (Gas Detectors)					

### Water Maintenance Technician 3 Requirements

2 years experience as a Water Maintenance Tech 2 for Tech 3	Lead Initials	Date Complete	IMS Initials	Date Reviewed	Comments
<b>Subject-Matter Training</b>					
<b>Repair</b>					
(1) Disinfection Procedures					
(2) Install and Repair valves, water mains, sewer mains, manholes, meter boxes					
<b>Water Maintenance</b>					
(1) Fire Hydrant Maint & Repair/Installation					
(2) Fire Hydrant Inspection					
(3) Service Line Flushing					
(4) Making Taps (small & large)					
<b>Sewer Maintenance</b>					
(1) Sewer Line Maint Procedures					
(2) Bleeder & Regulator Maint.					
(3) Odor Investigation					
(4) Bar Rack Carts/Apex Storm Gates					
(5) Pipe Bridges/Siphon Lines					
(6) Multi-conductor cable repair					
(7) Use of General Televising & Video Taping Equipment					

### Industrial Mechanic 2 Requirements

4 years experience as an Industrial Mechanic 1	Supv. Initials	Date Complete	IMS 2 Initials	Date Reviewed	Plant Mgr/Supt. Initials
<b>Subject-Matter Training</b>					
<b>1. Use of Tools:</b>					
<ul style="list-style-type: none"> <li>The employee must demonstrate the KSAs required use of all of the hand tools and portable power tools available to the employees work group.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<b>2. Facility specific knowledge:</b>					
<ul style="list-style-type: none"> <li>This knowledge will include detailed knowledge of the mechanical equipment in these facilities</li> </ul> <b>Written test or oral board</b> <i>(Provide Work Order if Applicable)</i>					
<b>3. Work Order Procedures:</b>					

<p>The employee must demonstrate the KSAs required to document a request for work and to document the performance of work as required by the employees current work group.</p>					
<ul style="list-style-type: none"> <li>Successful documentation of five requests for work. Previous workorder records may be used to verify the demonstration of these KSAs.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Successful documentation of 10 work assignments. Previous workorder records may be used to verify the demonstration of these KSAs</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<p><b>4. Preventive Maintenance:</b> The employee must demonstrate the KSAs required for performance of preventive maintenance on the mechanical equipment at the facility or facilities that the employees' section is responsible for maintaining.</p>					
<ul style="list-style-type: none"> <li>These KSAs will be demonstrated through the successful completion of 2 PM cycles for at least 80% of the facilities maintained by the employees' section.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>One PM cycle for a facility will consist of all daily, weekly, monthly, semi-annual, and annual PM task associated with the facility. Facilities will be identified through the Hansen CMMS.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<p><b>5. Corrective Maintenance Procedures:</b> The employee must demonstrate the KSAs required to perform corrective maintenance (i.e. troubleshooting, equipment repair or replacement) on the mechanical equipment (i.e. pumps, aerator, fans, and tanks) at the facility or facilities that the employees' section is responsible for maintaining. These KSAs will be demonstrated through the</p>					

successful completion of 10 of the following corrective maintenance assignments

**\*\*Some items listed below may not be at the employee's current facility, and thus should not be counted.**

<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and correct the abnormal operation of a pump or aerator.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to remove and install a pump, aerator, or fan.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair pump control valves, air relief valves, or altitude valves.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and correct the abnormal operation of a clarifier or flocculator.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to plumb small diameter piping.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair isolation valves and check valves.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair water plant filter equipment.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair chlorine feed equipment.</li> </ul>					

<b>Hands on Demonstration</b> (Provide Work Order if Applicable)					
<b>6. Disinfection Procedures:</b>					
<ul style="list-style-type: none"> <li>The employee will demonstrate the KSAs required to perform the disinfection process for a pump, valve, or fitting.</li> </ul>					
<b>Hands on Demonstration</b>					
<b>7. Rigging and Lifting:</b>					
<ul style="list-style-type: none"> <li>The employee will have the KSAs required to rig and lift the equipment that the employees' section is responsible for maintaining. These KSAs will be verified through a written test on proper rigging techniques and through demonstration of the operation of each piece of lifting equipment used by the employees section (i.e. truck hoist, overhead cranes, chain falls).</li> </ul>					
<b>Hands on Demonstration</b>					
<b>8. Industrial Safety and Health:</b>					
<ul style="list-style-type: none"> <li>The employee must have knowledge of industrial health and safety. Industrial Safety and Health includes areas such as lockout/tagout procedures, confined space entry requirement, PPE – personal protective equipment, personal hygiene in an industrial environment, and MSDS sheets.</li> </ul>					
<b>Written Test</b> (Training Coordinator verification)					
<b>9. Mechanical Print Reading:</b>					
<ul style="list-style-type: none"> <li>The employee must have the ability to interpret mechanical schematics of equipment; and process, structural, and mechanical drawings from engineering project drawings.</li> </ul>					
<b>Written Test</b> (Training Coordinator verification)					
<b>10. Laser Alignment:</b>					
<ul style="list-style-type: none"> <li>The employee should have exposure to the practice of Laser Alignment. The employee will be required to participate in a one day, MWS class on Laser Alignment.</li> </ul> <p><b>**Items listed may not be applicable to employee's current duties, and thus should not be counted.</b></p>					



## Industrial Electrician 2 Requirements

4 years experience as an Industrial Electrician 1 or 3 years experience as an Electrician 1 with Assoc. Degree	Supv. Initials	Date Complete	IMS 2 Initials	Date Reviewed	Plant Mgr/Supt. Initials
<b>Subject-Matter Training</b>					
<b>1. Use of testing equipment:</b>					
<ul style="list-style-type: none"> <li>The employee must demonstrate the KSAs required for use all of the electrical test equipment available to the employees work group.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<b>2. Facility specific knowledge:</b>					
<ul style="list-style-type: none"> <li>This knowledge will include detailed knowledge of the mechanical equipment in these facilities</li> </ul> <b>Written test or oral board</b> <i>(Provide Work Order if Applicable)</i>					
<b>3. Work Order Procedures:</b>					
The employee must demonstrate the KSAs required to document a request for work and to document the performance of work as required by the employees current work group.					
<ul style="list-style-type: none"> <li>Successful documentation of five requests for work. Previous workorder records may be used to verify the demonstration of these KSAs.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Successful documentation of 10 work assignments. Previous workorder records may be used to verify the demonstration of these KSAA</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<b>4. Maintenance Activities:</b>					
The employee must demonstrate the KSAs required to perform maintenance on the electrical equipment (i.e MCCs, motors, level controls) at the facility that the employee is responsible for maintaining <b>**Some items listed below may not be at the employee's current facility, and thus should not be counted.</b>					

<ul style="list-style-type: none"> <li>Four assignments that demonstrate the KSAs required to disconnect a motor and to properly makeup connections in the motor junction box.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to remove and install a pump, aerator, or fan.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair pump control valves, air relief valves, or altitude valves.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and correct the abnormal operation of a clarifier or flocculator.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to plumb small diameter piping.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair isolation valves and check valves.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and repair water plant filter equipment.</li> </ul> <p><b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i></p>					
<b>5. Rigging and Lifting:</b>					
<ul style="list-style-type: none"> <li>The employee will have the KSAs required to rig and lift the equipment that the employees' section is responsible for maintaining. These KSAs will be verified through a written test on proper rigging techniques and through demonstration of the operation of each piece of lifting equipment used by the</li> </ul>					

employees section (i.e. truck hoist, overhead cranes, chain falls).					
<b>Hands on Demonstration</b>					
<b>6. Industrial Safety and Health:</b>					
<ul style="list-style-type: none"> <li>The employee must have knowledge of industrial health and safety. Industrial Safety and Health includes areas such as lockout/tagout procures, confined space entry requirement, PPE – personal protective equipment, personal hygiene in an industrial environment, and MSDS sheets.</li> </ul>					
<b>Written Test</b> (Training Coordinator verification)					
<b>7. Electrical Print Reading:</b>					
<ul style="list-style-type: none"> <li>The employee must have the ability to interpret electrical schematics of equipment; and electrical drawings from engineering project drawings. This ability may be verified through a written test or oral board.</li> </ul>					
<b>Written Test</b> (Training Coordinator verification)					
<b>8. **Predictive Maintenance:</b>					
<ul style="list-style-type: none"> <li>The employee should have exposure to the use of Predictive Maintenance Technologies. The employee will be required to participate in a one day, MWS class on Predictive Maintenance Technologies.</li> </ul>					
<b>Certificate of Completion or Supervisor Verification</b> <i>(**Items listed may not be applicable to employee's current duties, and thus should not be counted.)</i>					

### Industrial Electronics Technician 2 Requirements

4 years experience as an Industrial Electronics Tech 1 or 3 years experience with Assoc. Degree	Supv. Initials	Date Complete	IMS 2 Initials	Date Reviewed	Plant Mgr/Supt. Initials
<b>Subject-Matter Training</b>					
<b>1. Use of testing equipment:</b>					
<ul style="list-style-type: none"> <li>The employee must demonstrate the KSAs required to use electrical test equipment such as a Volt-Ohm Meter.</li> </ul>					
<b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<b>2. Facility specific knowledge:</b>					

<ul style="list-style-type: none"> <li>The employee must have detailed knowledge of the facility or facilities that the employee's section is responsible for maintaining. This knowledge will include detailed knowledge of the electronic equipment and controls in these facilities.</li> </ul> <p><b>Written test or oral board</b> (Provide Work Order if Applicable)</p>					
<p><b>3. Work Order Procedures:</b> The employee must demonstrate the KSAs required to document a request for work and to document the performance of work as required by the employees current work group.</p>					
<ul style="list-style-type: none"> <li>Successful documentation of five requests for work. Previous workorder records may be used to verify the demonstration of these KSAs.</li> </ul> <p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p>					
<ul style="list-style-type: none"> <li>Successful documentation of 10 work assignments. Previous workorder records may be used to verify the demonstration of these KSAs</li> </ul> <p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p>					
<p><b>4. Maintenance Activities:</b> The employee must demonstrate the KSAs required to perform maintenance(i.e. troubleshooting, equipment repair or replacement) on the electronic equipment (i.e. PLCs, VFDs, flow meters, level controls) at the facility or facilities that the employees section is responsible for maintaining. These KSAs will be demonstrated through the successful completion of the following corrective maintenance assignments (equipment will be used that apply to the individual's assigned location): <b>**Some items listed below may not be at the employee's current facility, and thus should not be counted.</b></p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot power and IO for PLCs.</li> </ul> <p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot 4-20 milliamp</li> </ul>					

signals. Identify and interpret 4-20 ma. signals. <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to program and calibrate a pressure transmitter.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and replace an ultrasonic level transducer, and program a milltronics unit.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to identify and interpret external signals for a VFD. Access and modify internal parameters of a VFD&gt;.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Two assignments that program and set-up any variety of flowmeter.</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to calibrate a turbidimeter, chlorine analyzer, and other laboratory equipment</li> </ul> <b>Hands on Demonstration</b> <i>(Provide Work Order if Applicable)</i>					
<b>5. Industrial Safety and Health:</b>					
<ul style="list-style-type: none"> <li>The employee must have knowledge of industrial health and safety. Industrial Safety and Health includes areas such as lockout/tagout procures, confined space entry requirement, PPE – personal protective equipment, personal hygiene in an industrial environment, and MSDS sheets.</li> </ul> <b>Written Test</b> (Training Coordinator verification)					
<b>6. Electrical Print Reading:</b>					
<ul style="list-style-type: none"> <li>The employee must have the ability to interpret electrical schematics of equipment; and electrical drawings from engineering project drawings. This ability may be verified</li> </ul>					

through a written test or oral board. <b>Written Test</b> (Training Coordinator verification)					
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**Industrial Technician Master Requirements**

Have three years experience as an Industrial Mechanic 2, Industrial Electrician 2, Industrial Electronics Technician 2, or Treatment Plant Technician 3	Supv. Initials	Date Complete	IMS 2 Initials	Date Reviewed	Plant Mgr/Supt. Initials
<b>Subject-Matter Training</b>					
<b>1. Use of testing equipment:</b>					
<ul style="list-style-type: none"> <li>The employee must demonstrate the KSAs required for use all of the electrical test equipment available to the employees work group.</li> </ul> <b>Hands on Demonstration</b> (Provide Work Order if Applicable)					
<b>2. Facility specific knowledge:</b>					
<ul style="list-style-type: none"> <li>This knowledge will include detailed knowledge of the mechanical equipment in these facilities</li> </ul> <b>Written test or oral board</b> (Provide Work Order if Applicable)					
<b>3. Maintenance Activities:</b> The employee must demonstrate the KSAs required to perform elementary level maintenance(i.e. troubleshooting, equipment repair or replacement) on the electrical equipment (i.e. MCCs, motors, level controls) at the facility or facilities that the employees section is responsible for maintaining. <b>**Some items listed may not be applicable to employee's current duties, and thus should not be counted.</b>					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to disconnect a single-phase motor and to properly makeup connections in the motor junction box.</li> </ul> <b>Hands on Demonstration</b> (Provide Work Order if Applicable)					
<ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to disconnect a three phase, 480v motor.</li> </ul>					

<p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p> <ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to perform elementary level troubleshooting on 480volt equipment and control systems(i.e. pumps, aerators, skimmers, fans, etc).</li> </ul>					
<p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p> <ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to hookup and operate a generator. Generator size will be limited to 250KW.</li> </ul>					
<p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p> <ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to install conduits and pull wires for 480volt equipment. Conduit sizes will be limited to 2”.</li> </ul>					
<p><b>Hands on Demonstration</b> (Provide Work Order if Applicable)</p> <ul style="list-style-type: none"> <li>Two assignments that demonstrate the KSAs required to troubleshoot and replace solenoid valves.</li> </ul>					
<p><b>4. Rigging and Lifting:</b></p>					
<ul style="list-style-type: none"> <li>The employee will have the KSAs required to rig and lift the equipment that the employees’ section is responsible for maintaining. These KSAs will be verified through a written test on proper rigging techniques and through demonstration of the operation of each piece of lifting equipment used by the employees section (i.e. truck hoist, overhead cranes, chain falls).</li> </ul> <p><b>Hands on Demonstration</b></p>					
<p><b>5. Electrical Safety:</b></p>					
<ul style="list-style-type: none"> <li>The employee will be proficient in Industrial Electrical Safety Procedures.</li> </ul> <p><b>Written test, oral board, or Journeyman’s License, or NEC License</b> (Training Coordinator verification)</p>					

The Training Division of the Metro Water Services department keeps a record of each completed targeting requirement form and initiates a target upgrade after the employee has completed the prescribed training curriculum denoted by their supervisor and division manager.

- The Safety Training Program at MWS is taken very seriously to ensure the health and well-being of our employees and the community. Many of the Safety Training classes that are taken at MWS have direct correlation to CMOM and the caution that must be used by employees when dealing with sewer issues. Due to the magnitude of Safety Training at MWS and with the community, most of this training occurs on an annual basis. Below is a list of all of the Safety Training done at MWS.

<b>Safety Training Requirements</b>	<b>Who Receives</b>	<b>How Often</b>
Employee Emergency Plans and Fire Prevention Plans 29 CFR 1910.38	All Employees	Annual
Process Safety Management 29 CFR 1910.119	All Employees where relevant	Annual
Personal Protective Equipment 29 CFR 1910.132	All Employees where relevant	At Time Of Initial Employment
Respiratory Protection 29 CFR 1910.134	All Employees where relevant	Annual
Permit Confined Spaces Entry 29 CFR 1910.146	All Employees where relevant	Annual
Lockout/Tagout 29 CFR 1910.147	All Employees where relevant	Annual
Fire Protection 29 CFR 1910.155	Designated Employees	Annual
Portable Fire Extinguishers 29 CFR 1910.157	Designated Employees	Annual
Powered Industrial Trucks 29 CFR 1910.178	Designated Employees	Biannual
Bloodborne Pathogens. 29 CFR 1910.1030	All Employees where relevant	Annual
Hazard Communication CFR 1910.1200	All Employees where relevant	Annual
Laboratory Safety 29 CFR 1910.1450	Designated Employees	Annual



