



**NATURAL RESOURCES CONSERVATION AND
DEVELOPMENT**

Level-II

Learning Guide-70

Unit of Competence: Assist Operation and

Maintenance of Irrigation and Drainage

Module Title: Assisting Operation and Maintenance

Of Irrigation and Drainage

LG Code: AGR NRC2 M15 L06 - LG-70

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LO6: Finalize work and report

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Cleaning, maintaining and storing Tools, equipment and machinery
- Identifying and reporting Operating faults
- Reporting Problems or difficulties or hazards
- Documenting and reporting Work outcomes

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, **upon completion of this Learning Guide, you will be able to:**

- Clean, maintain and store Tools, equipment and machinery
- Identify and report Operating faults
- Report Problems or difficulties or hazards
- Document and report Work outcomes

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 and 4.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 Sheet 4, Sheet 5, Sheet 6 and Sheet 7”.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3 and Self-check 4” **in page -2, 5, 8 and 11** respectively.

Information Sheet-1	Cleaning, maintaining and storing Tools, equipment and machinery
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1.1. Handling irrigation equipment safely

These may include safe systems and procedures for the operation and maintenance of machinery and equipment, for outdoor work (including protection from solar radiation, dust and noise), manual handling, prevention of electrical injury, handling, transportation, protection against chemical residues, including that in/on foliage, water, soil and other items, and the use and maintenance of relevant personal protective clothing and equipment.

Any irrigation activity that requires squirting, spraying, or pressure release of fluid requires personal protective equipment that includes gloves, gown, mask with eye shield to prevent exposure to debris and aerosolization of microorganisms. Splash shield devices will still require wearing of gowns, and face protection due to splash potential.

Personal protective equipment (PPE) is used to protect an individual from hazards associated with their work tasks or environment. Specific types of personal protective equipment include protective clothing, eyewear, respiratory devices, protective shields, gloves, and hearing protection. Personal protective equipment is not a substitute for engineering controls such as chemical fume hoods and bio safety cabinets, or for administrative controls and good work practices. PPE is used in conjunction with these controls to provide safety and maintain health.

Some of the commonly used PPE include the following:

Eye protection

It is required to use eye protection equipment like goggle, eye shield, to protect our eye from dusts, chemicals, etc. by all workers engaged in hazardous activities or are exposed to identify eye hazards.

Hand Protection

It is required to use appropriate hand protection when hands are exposed to hazards, such as:

- ✓ Skin absorption from harmful substances
- ✓ Cuts, lacerations or abrasions
- ✓ Chemical exposure
- ✓ Thermal burns and/or temperature extremes
- ✓ Potentially infectious material

Body Protection

- ✓ **Chemical Resistant Clothing:** Protective apparel designed to provide a barrier against a variety of chemical hazards. Chemical resistive clothing may be required for tasks where chemical splashing is anticipated or large volume transfers are conducted. Prior to selection of chemical resistant clothing, EH&S should be consulted;

- ✓ Laboratory Apparel and Scrub Suits: A wide variety of styles and materials are available to protect employees during laboratory operations. The selected type of lab coat or other apparel is designed to protect the wearer against accidental splashes or day-to-day handling of chemicals
- ✓ Clean room Apparel: Clean room apparel is designed and classified to meet federal requirements for the control of airborne particles
- ✓ overalls

Ear and Hearing Protection

- ✓ Ear plugs and muffs are available for any employee potentially exposed to noise levels

Respiratory Protection

- ✓ ear protectors

The other body protectors are Steel capped boots/shoes, Gloves, Sun hat, Sunscreen lotion, Safety goggles, and Face mask and so on.

Self-Check -1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Handling irrigation equipment safely consist many activities. List them ?(5pts)

Note: Satisfactory rating 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Information Sheet-2	Identifying and reporting Operating faults
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2.1 Identifying and reporting Operating faults

Fault Reporting is a maintenance concept that increases operational availability and that reduces operating cost through three mechanisms.

- ✓ Reduce labor-intensive diagnostic evaluation
- ✓ Eliminate diagnostic testing down-time
- ✓ Provide notification to management for degraded operation

Maintenance requires three actions.

- ✓ Fault discovery
- ✓ Fault isolation
- ✓ Fault recovery

Fault discovery requires diagnostic maintenance, which requires system down time and labor costs. Down time and cost requirements associated with diagnostics are eliminated for every item that satisfies the following criteria.

- ✓ Automated diagnostic
- ✓ Instrumented for remote viewing
- ✓ Displayed in the vicinity of supervisory personnel

Fault reporting is an optional feature that can be forwarded to remote displays using simple configuration setting in all modern computing equipment. The system level of reporting that is appropriate for Condition Based Maintenance are critical, alert, and emergency, which indicate software termination due to failure. Specific failure reporting, like interface failure, can be integrated into applications linked with these reporting systems. There is no development cost if these are incorporated into designs.

Other kinds of fault reporting involves painting green, yellow, and red zones onto temperature gages, pressure gages, flow gages, vibration sensors, strain gages, and similar sensors. Remote viewing can be implemented using a video camera.

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. _____ is a maintenance concept that increases operational availability and that reduces operating cost through three mechanisms. (5pts)

Note: Satisfactory rating 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-3	Reporting Problems or difficulties or hazards
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3.1 Problems or difficulties or hazards

Hazard identification

Hazard identification is a process used to identify all possible situations where people may be exposed to injury, illness or disease, the type of injury or illness that may result from these and the way in which work is organized and managed. It is the first part of a risk management strategy described in Occupational Health & Safety Management System (OHSMS).

Workplace Health and Safety Regulations require employers to ensure that appropriate measures are undertaken to identify all hazards and to manage risk in the workplace.

Hazard: a situation at the workplace capable of causing harm (i.e. capable of causing personal injury, occupationally related disease or death).

Reporting Hazards and Accidents

Employees are required to report any situation or occurrence in the workplace that may present a risk or have the potential to affect the health and safety of employees or others in the workplace.

It is required that all injuries, incidents and hazards are properly reported, investigated and recorded in accordance with the procedures detailed below.

An accident is commonly used to describe an incident which has resulted in an injury.

An incident is any unplanned event resulting in or having the potential for injury, ill health, damage or loss.

A hazard is a source or a situation with the potential for harm in terms of human injury or ill health.

Injury Reporting

- ✓ In the event of an injury the person involved should;
- ✓ seek first aid or medical attention as required;
- ✓ inform their supervisor as soon as possible;
- ✓ complete the Confidential Incident / Injury Report Form
- ✓ Assist their supervisor in the investigation and reporting on the incident or accident.

The Supervisor of the person(s) involved in the incident is required to;

- ✓ ensure that any injured person is promptly attended to;
- ✓ conduct an initial investigation into the cause of the incident;
- ✓ complete the Confidential Incident / Injury Report Form and ensure that it reaches the Safety and Health; and

- ✓ Notify and liaise with the local Safety & Health Representative and line management in relation to the incident.
- ✓ Ensure that all serious injuries are reported to the Safety and Health immediately after hours of assistance.

On identifying a hazard, staff must act as quickly as possible to eliminate it. This may mean a simple alteration, substitution or removal of the hazard.

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. _____ is a process used to identify all possible situations where people may be exposed to injury, illness or disease, the type of injury or illness that may result from these and the way in which work is organized and managed(3 pts.)
2. What is Hazard? (3pts.)

Note: Satisfactory rating - 6 points

Unsatisfactory – below 6 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-4	Documenting and reporting Work outcomes
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4.1 Documenting and reporting Work outcomes

4.1.1 Documenting Work outcomes

Data documenting are maintained in an archive so as to be retrievable as needed. Records are preserved and archived for retrieval as needed based on the following:

- ✓ Include documenting of all data and information required such as training records, results of audits and reviews, copies of monitoring (sampling) and reporting analytical results, expired permits, construction approvals, and inspection results.
- ✓ Ensure that documenting is legible, identifiable and traceable to the operation/activity.
- ✓ Ensure that documenting are stored and maintained so they are readily retrievable and protected against damage, deterioration or loss.
- ✓ Ensure that the retention times of documenting have been established, recorded and communicated to staff.
- ✓ The data documented should be legible, if possible written in computer, accurate (carefully documented) and complete (consisting of all the required information).

4.1.2 Reporting Work outcomes

Reporting: Think about who is going to read the report. What you say and how you say it will depend on this.

In Writing a report: -

- ✓ What need were you trying to address? (Your original aim?)
- ✓ What did you actually do? (Out puts)
- ✓ What went wrong and why?
- ✓ What difference did you make? What were the key headline achievements? (outcomes)
- ✓ What could be learned from your experience? Will you do anything differently next time?

It is a mistake to start to write any report until you have -

1. analyzed your information
2. Decided what you want to say

If you don't do this, your report is likely to be muddled, and the reader will not know what you're trying to tell them. It will be a waste of time and effort.

Reporting should not be something you do just because you have to, for example for a funder.

There are many ways to use reporting to tell your story:

- ✓ Your own annual report
- ✓ Presentations
- ✓ Work report to managers, trustees or colleagues
- ✓ Newsletters
- ✓ Web pages
- ✓ Press releases
- ✓ Feedback to staff (e.g. appraisal)
- ✓ Report for funder

The main content of your report should include:

Our outputs: main facts and figures about our activities:

The main facts and figures about your activities

Our outcomes: what did we achieve?

What goes here?

The outcomes you have achieved. Try to be specific.

So, based on this principle we have to report our work outcomes to appropriate persons.

Self-Check - 4	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. In Writing a report, what things you should have think? (5pts.)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____