

NINE MILE POINT NUCLEAR STATION

UNIT II OPERATIONS

LESSON PLAN

07-191-91

INSTRUMENTATION AND CONTROL

ELECTRICAL INSTRUMENTS

02-REQ-002-309-2-01

Prepared By: Unit #2 Training Department

DATE AND INITIALS

APPROVALS

SIGNATURES

REVISION 0

Training Supervisor  
Unit #2  
G. L. Weimer

*[Signature]*

*[Signature]*

Assistant Superintendent  
Training - Nuclear  
R. T. Seifried

*[Signature]*

*[Signature]*

Superintendent Operations  
Unit #2  
R. G. Smith

*[Signature]*

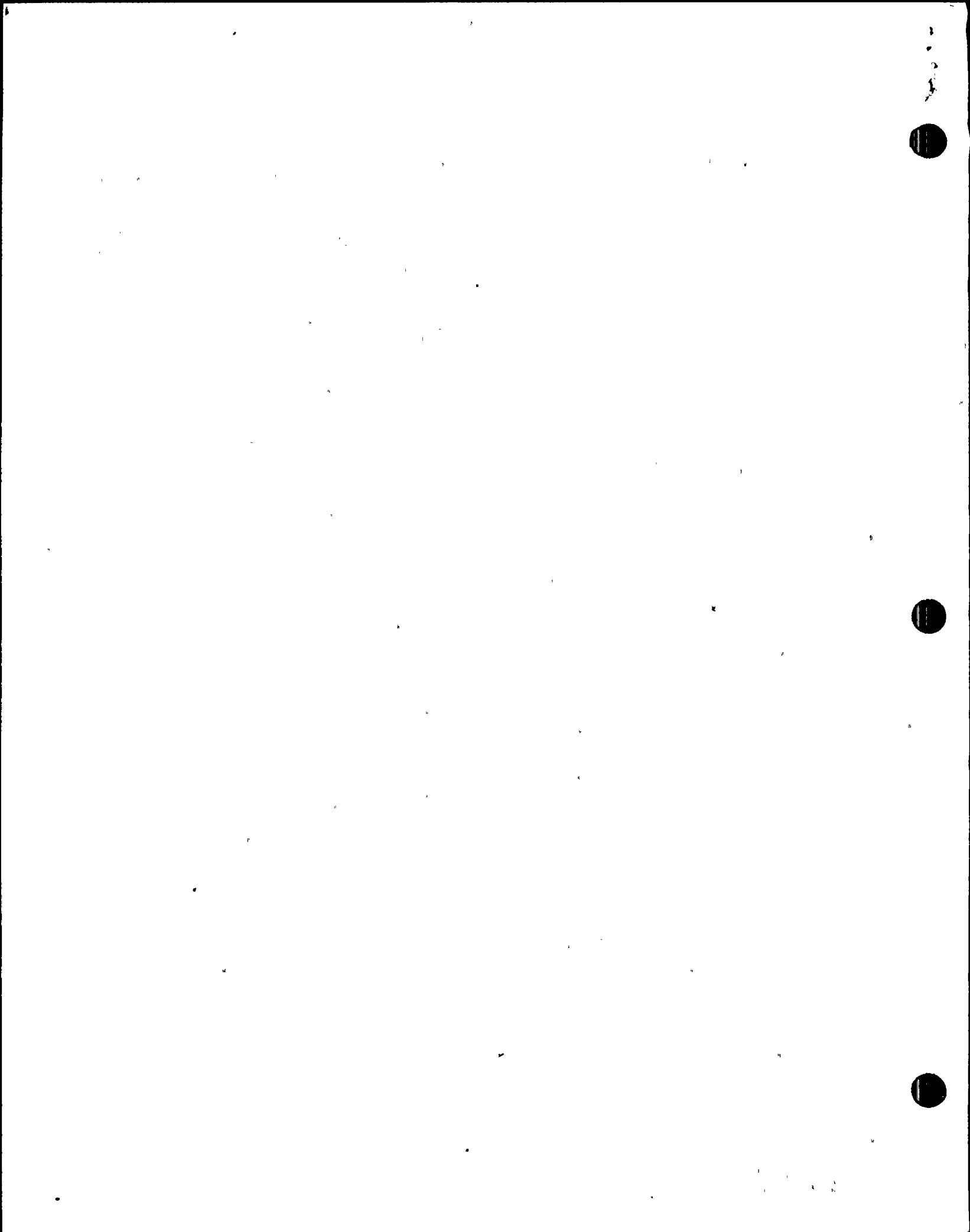
*[Signature]*

Revision: 0 (Effective Date: 6/4/88)  
Number of Pages: 4

CONTROLLED  
Date: Apr 11, 1988  
Pages: 1 - 4

NIAGARA MOHAWK POWER CORPORATION  
MASTER CONTROLLED DOCUMENT

251



## I. TRAINING DESCRIPTION

A. Title: Instrumentation and Control, Electrical Instruments

B. Purpose:

In a lecture presentation, the instructor shall present information for the student to meet each Student Learning Objective. Additionally, he shall provide sufficient explanation to facilitate the student's understanding of the information presented.

C. Estimated Duration: Approximately 1 hour

D. Training Methods:

- Classroom Lecture
- Assign the Student Learning Objectives as review problems with the student's obtaining answers from the text, writing them down and handing them in for grading.

E. References:

1. GE BWR Academic Series, Instrumentation and Control Rev. 1, Chapter One.

## II. REQUIREMENTS AND PREREQUISITES

A. Requirements for Class:

1. AP-9, Rev. 2, Administration of Training
2. NTP-10, Rev. 3, Training of Licensed Operator Candidates

B. Prerequisites:

1. Instructor.
  - a. Demonstrated knowledge and skills in the subject, at or above the level to be achieved by the trainees, as evidenced by previous training or education, or
  - b. SRO license for Nine Mile Point Unit Two or a similar plant, or successful completion of SRO training including simulator certification at the SRO level for Nine Mile Point Unit Two.
  - c. Qualified in instructional skills as certified by the Training Analyst Supervisor.



2. Students
  - a. Meet eligibility requirements per 10CFR55, or
  - b. Be recommended for this training by Operations Superintendent or his designee or the Training Superintendent.

### III. TRAINING MATERIALS

#### A. Teaching Materials

1. Transparency Package
2. Overhead Projector
3. Whiteboard and felt tip markers
4. GE BWR Academic. Series, Instrumentation and Control, Instructor Guide, Chapter One
5. OLP-ICA

#### B. Student Materials

1. GE BWR Academic Series, Instrumentation and Control, Text

### IV. EXAMINATIONS, QUIZZES AND ANSWER KEYS

Exams will be generated and administered as necessary. They will be on permanent file in the Records Room.



V. OBJECTIVES

Upon completion of this chapter, mastery of required topical knowledge will be demonstrated by performing Enabling Objectives listed beneath each topic title.

1. Electrical Instrument Meter Movement Mechanism
  1. Identify from a diagram of a basic moving coil meter the permanent magnet, moving coil, springs, zero adjustment screw, pointer, and scale.
  
2. DC Electrical Measuring Instruments
  1. Describe the purpose of a dc ammeter, dc voltmeter, ohmmeter and dc wattmeter.
  2. Distinguish between the operation of a dc ammeter and dc voltmeter.
  3. Explain the use of a single meter movement to measure various ranges of values.
  4. Predict new pointer positions for a given change in range selection.
  
3. AC Electrical Measuring Instruments
  1. Describe the purpose of a rectifier.
  2. Explain why ammeters and voltmeters are calibrated to indicate effective values.
  3. Explain the measurement actually made by an ac wattmeter.





VI. LESSON CONTENT

- A. GE BWR Academic Series, Instrumentation and Control, Instructor Guide, Chapter One.

