# Viking Seminar Information Sheet

**Seminar (Event) Title:** **Fundamentals of Water-Based Fire Protection Systems**

**Seminar Description:** Through discussion, activities and interactive labs this seminar will explore the operation of the components of a water-based fire protection system with a focus on fire sprinkler systems. Topics covered will include codes & standards, water supply, fire sprinklers, and system valves.

**Duration (Days):** 2 days

**Number of Modules:** 7

**Total Instructional Minutes:** 690 (11.5 hours)
*Instructional minutes do not include the facility tour, breaks, or lunch totaling ˜3 hours.*

**Seminar Format(s):** Lecture, Activity, Hands-on Labs and demonstration

**Participant Materials:** Sprinkler Guides, and Digital tools

**Learning Outcomes:** Upon completion of this seminar the attendee will be able to:

1. Describe how the codes and standards establish sprinkler system design and installation requirements
2. Describe how fire develops and the impact of fuels loads, fuel arrangement, and location
3. Compare various sprinklers and explain how they address fire challenges
4. Determine if a water supply is adequate for system demand
5. Identify the four primary fire sprinkler system types

**Assessment Method(s):** Activity Participation and Presentation

**TITLE: MODULE 1:** **CODES AND STANDARDS**

**Duration:** (60min)

**Learning Outcomes:** At the conclusion of this module participant will be able to:

1. Identify the difference between a codes and installation standards
2. Discuss the functions of listing and approval agencies
3. Identify occupancy and hazard classifications

**Delivery Methods:** Lecture

**Activity Descriptions:** Identify & Present Occupancy and Hazard Classifications

**Assessment Method(s):** Participation

**TITLE: MODULE 2:** **WATER SUPPLIES**

**Duration:** (90min)

**Learning Outcomes:** At the conclusion of this module participant will be able to:

1. Identify different water supplies for fire sprinkler systems
2. Conduct a water supply test
3. Evaluate the capability of the water supply to meet system demand

**Delivery Methods:** Lecture, discussion, and lab

**Activity Descriptions:** Fire hydrant testing and water supply curve graphing

**Assessment Method(s):** Present the Results

**TITLE: MODULE 3:** **FIRE SPRINKLERS**

**Duration:** (180 min)

**Learning Outcomes:** At the conclusion of this module participant will be able to:

1. Identify the defining parts of a fire sprinkler
2. Compare the differences in sprinkler characteristics

3. Identify sprinkler operational modes and applications
4. Compare standard spray to extended coverage sprinklers
5. Identify the differences of ESFR fire sprinklers to control mode sprinklers.

**Delivery Methods:** Lecture and demonstration

**Activity Descriptions:** Sprinkler Worksheet

**Assessment Method(s):** Participation

**TITLE: MODULE 4:** **DAY 1 REVIEW ACTIVITY**

**Duration:** (60 min)

**Learning Outcomes:** During this module participant will be able to:

1. Independently explain to the class the characteristics of the fire sprinkler they were provided.

**Delivery Methods:** Independent discussions

**Activity Descriptions:** N/A

**Assessment Method:** Participation

**TITLE: MODULE 5:** **WET AND DRY SPRINKLER SYSTEMS**

**Duration:** (180 min)

**Learning Outcomes:** At the conclusion of this module participant will be able to:

2. Identify the characteristics of the wet and dry sprinkler system valve configurations
3. Explain the applications of wet and dry sprinkler systems
4. Explain the operational sequence of wet and dry sprinkler systems
5. Identify the parts of wet and dry sprinkler systems
6. Perform system activation and reset

**Delivery Methods:** Lecture, discussion, demonstration, and Labs

**Activity Descriptions:** Labs

**Assessment Method:** Perform system activation and reset

**TITLE: MODULE 6:** **INTRODUCTION TO PRE-ACTION & DELUGE SYSTEMS**

**Duration** (60 min)

**Learning Outcomes:** At the conclusion of this module the participant will be able to:

1. Identify the characteristics of the pre-action and deluge sprinkler system valve configurations.
2. Explain the applications of pre-action and deluge sprinkler systems
3. Explain the operational sequence of pre-action and deluge sprinkler systems
4. Identify the parts of pre-action and deluge sprinkler systems
5. Use the Valve Configurator

**Delivery Methods:** Lecture and demonstration

**Activity Descriptions:** Demonstration

**Assessment Method:** None

**TITLE: MODULE 7:** **COURSE REVIEW ACTIVITY**

**Duration** (60 min)

**Learning Outcomes:** During this module the participant will be able to:

1. Answer questions within the activity, independently through explanation of associated course subjects.

**Delivery Methods:** Independent discussions

**Activity Descriptions:** N/A

**Assessment Method:** Participation