

---

## Fuel Cell Standards

### XVIII. Anode Subsystem

---

## XVIII.b Hydrogen Injection and Metering

### Overview:

Classroom and lab topics

- Primary functions of the hydrogen injectors
- Injector mechanization
- PWM injection signals
- Injector controller
- Logic in determination of a fault
- Schematic representations versus actual components
- Trouble codes associated with injectors and manifold
- Injector electrical and mechanical noise mitigation

### Description:

The anode subsystem supplied hydrogen to the fuel cell membrane via hydrogen injectors similar to ICE gasoline or CNG injectors but with tighter tolerances

---

### Outcome (Goal):

Student will be able to explain the functions of the anode injection subsystem

---

### Objectives:

Students shall be able to:

1. When provided with a vehicle student will be able to identify the injector location and harness
2. Identify leaks and repair



3. Understand injector (s) their operations and normal position under various operating conditions
- 

Tasks:

Students will

1. Students will use a schematic, OEM service instructions and an OEM vehicle or complete fuel cell system to identify the injector and associated harness
  2. When provided with a vehicle student will be able to identify and troubleshoot the injector
  3. Verify injection signals at the harness
  4. Remove and replace injector using OEM service instructions
- 

To comment or offer suggestions on this standard, contact Ken Mays:

**Ken Mays**

**NEVTEX**

541-383-7753

[kmays@cocc.edu](mailto:kmays@cocc.edu)

