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## Fuel Cell Standards

### XVIII. Anode Subsystem

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#### XVIII.d Nitrogen Purge

##### Overview:

Classroom and lab topics

- Primary functions of the nitrogen purge function
- Purge mechanization
- Purge control methodology
- Logic in determination of a fault
- Trouble codes associated with excess nitrogen
- Trouble codes associated with excess hydrogen being dumped from the system
- Nitrogen purge mechanical noise mitigation

##### Description:

The anode subsystem is generally dead ended so that unreacted hydrogen is not exhausted. This requires mechanisms to remove nitrogen that build up in the anode due to cross membrane migration of the nitrogen. This causes poor stack performance. The function is often integrated with the stack hydrogen recirculation and liquid water removal.

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##### Outcome (Goal):

Student will be able to explain the functions of the nitrogen purge subsystem

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##### Objectives:

Students shall be able to:

1. Identify the nitrogen purge port location
2. Identify leaks and repair



3. Use onboard diagnostics to determine if nitrogen purge is operating correctly
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Tasks:

Students will

1. Students will use a schematic, OEM service instructions and an OEM vehicle or complete fuel cell system to identify the nitrogen purge hardware and associated wire harness
  2. Use onboard diagnostics to determine if nitrogen purge is operating correctly
  3. Using OEM service instruction determine any preventative maintenance or service interval
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