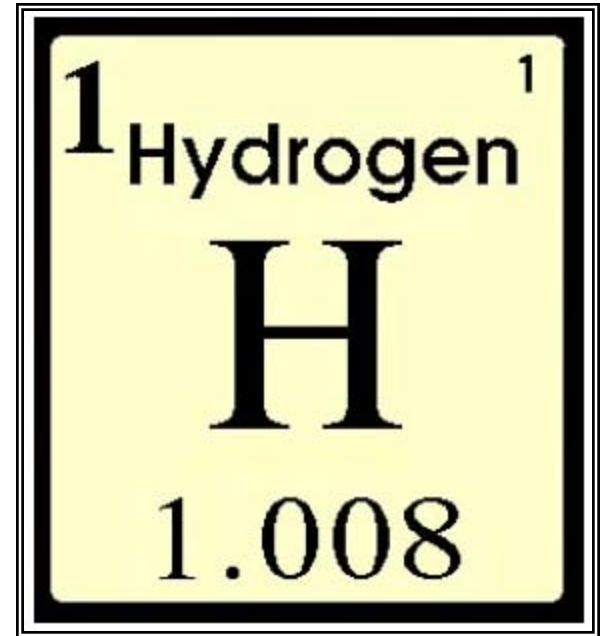


# Hydrogen Energy In West Virginia



West Virginia Hydrogen Working Group

Presented By David Haberman

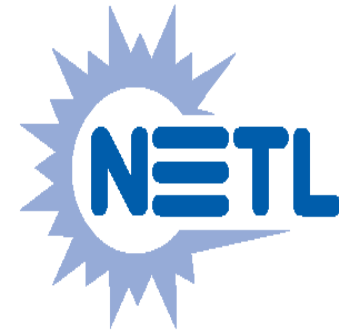
# Why Hydrogen

- Makes Carbon Management At Power Generation Impacting
- Redeems Major National Investment
- Avoids Dependency On Foreign Oil
- Gives Coal Legs
- Provides Cost Predictability To Consumer
- Safer Than Gasoline
- Creates New Industries



# West Virginia Hydrogen Working Group

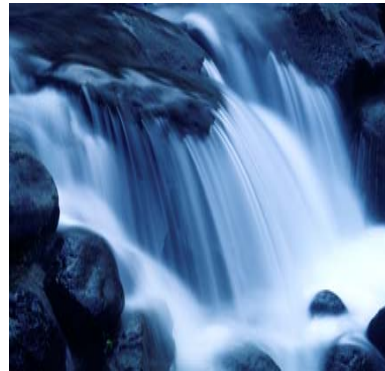
- Coordinated By NETL
- Broadly Inclusive
- Focused On  
Implementation Barrier  
Reduction
- Two Sites In  
Development: Charleston &  
Morgantown
- H2 Production &  
Dispensing Facilities



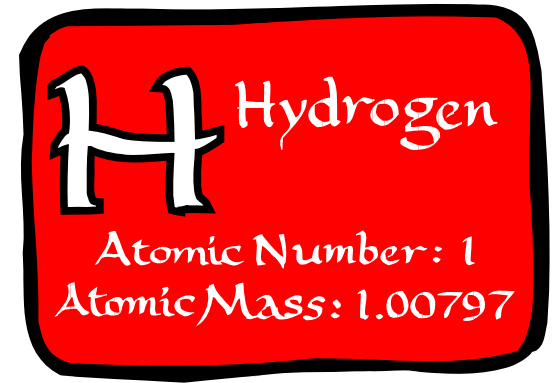
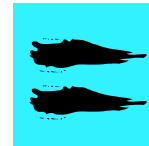
# Hydrogen Value Chain



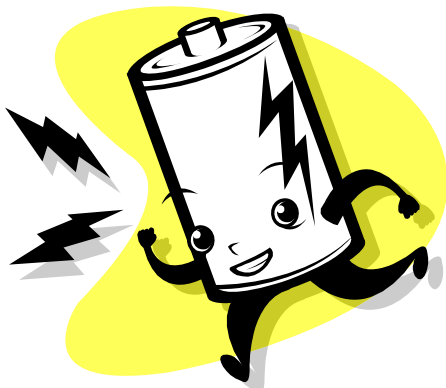
Coal Based Power



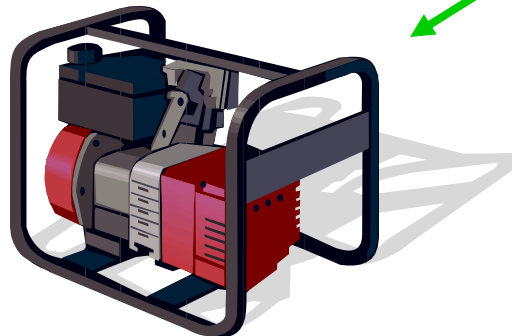
Water



Clean Fuel



Portable Batteries



Stationary Generators

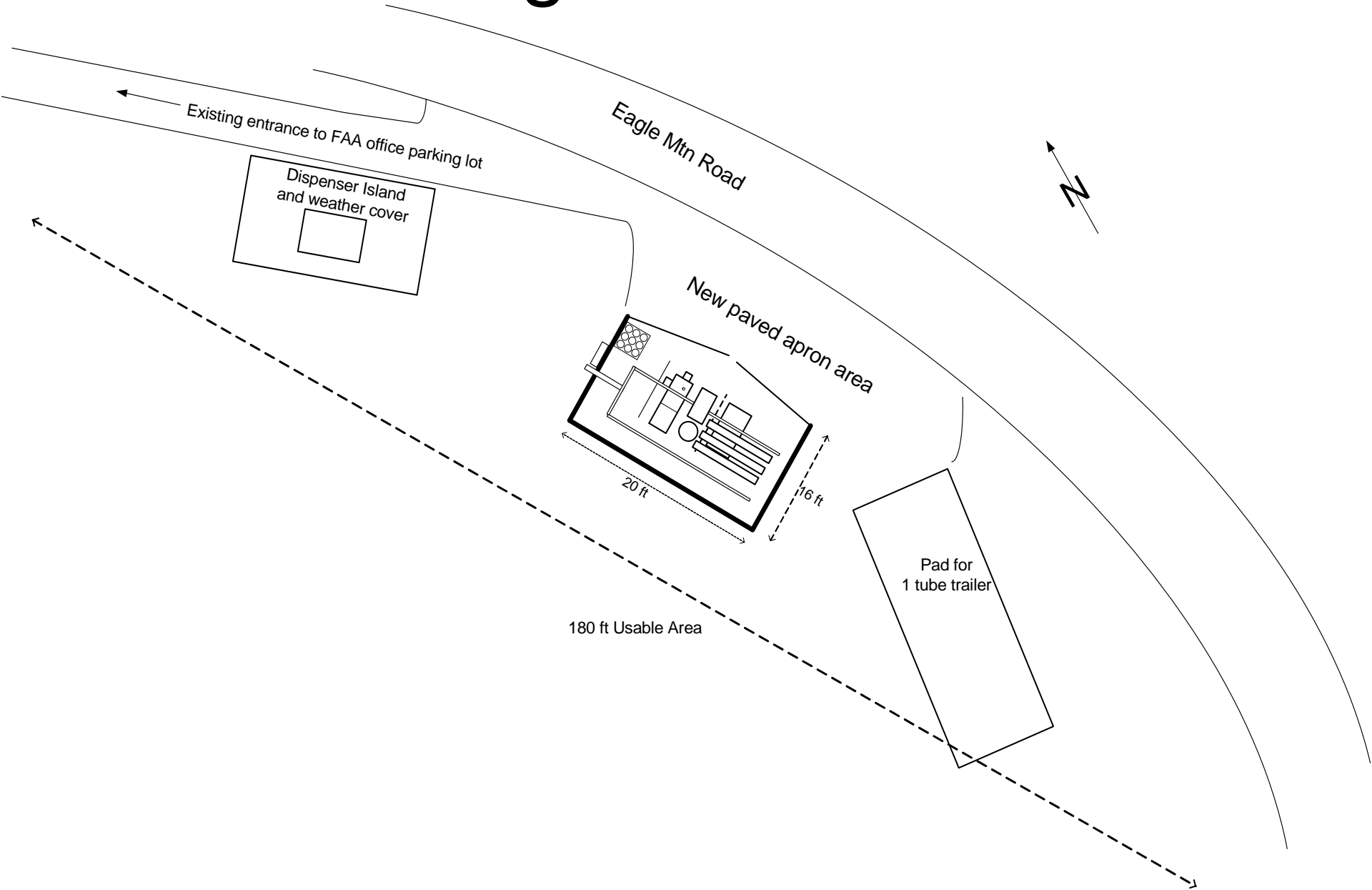


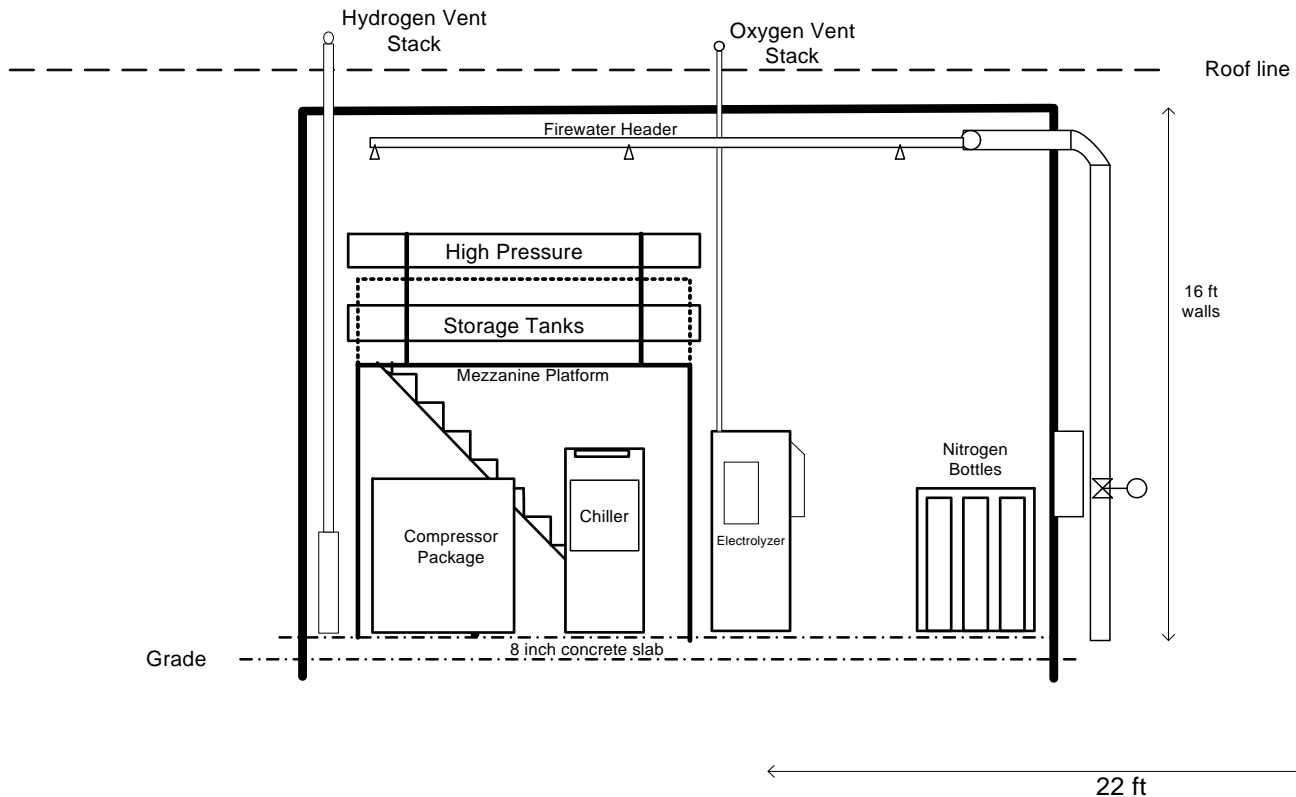
H2 Fueled Transportation



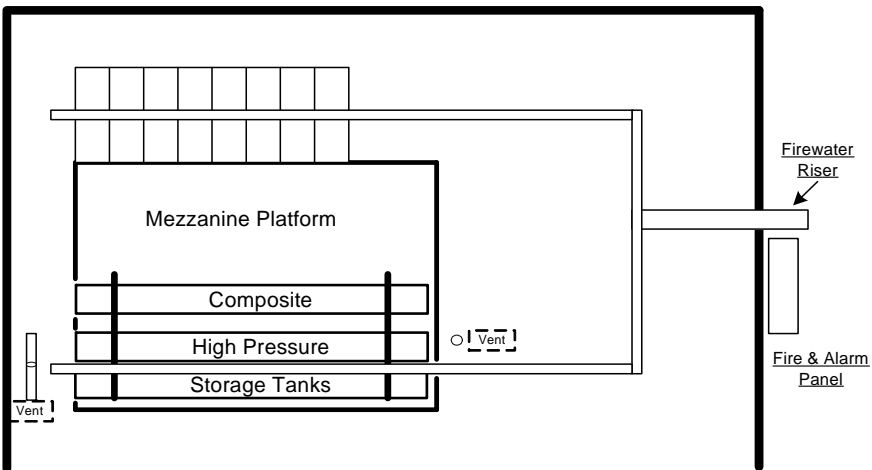
Proven Baseline For WV Stations

# Yeager Site Plan

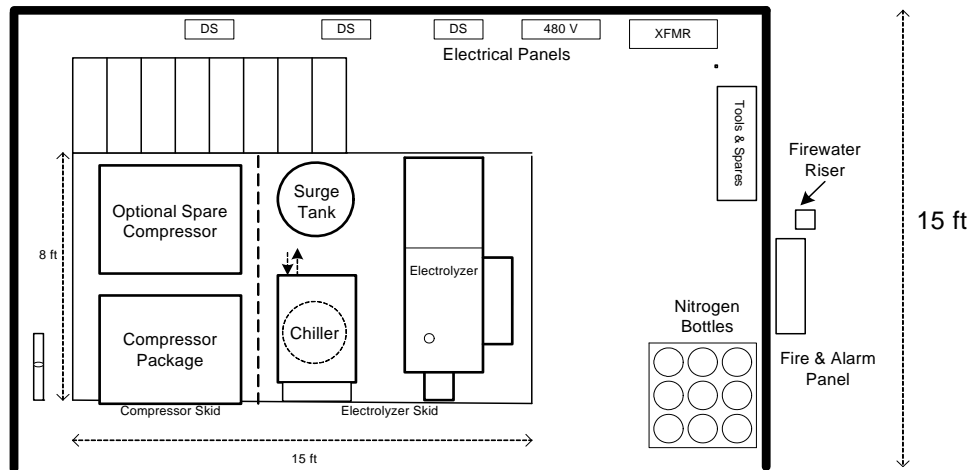




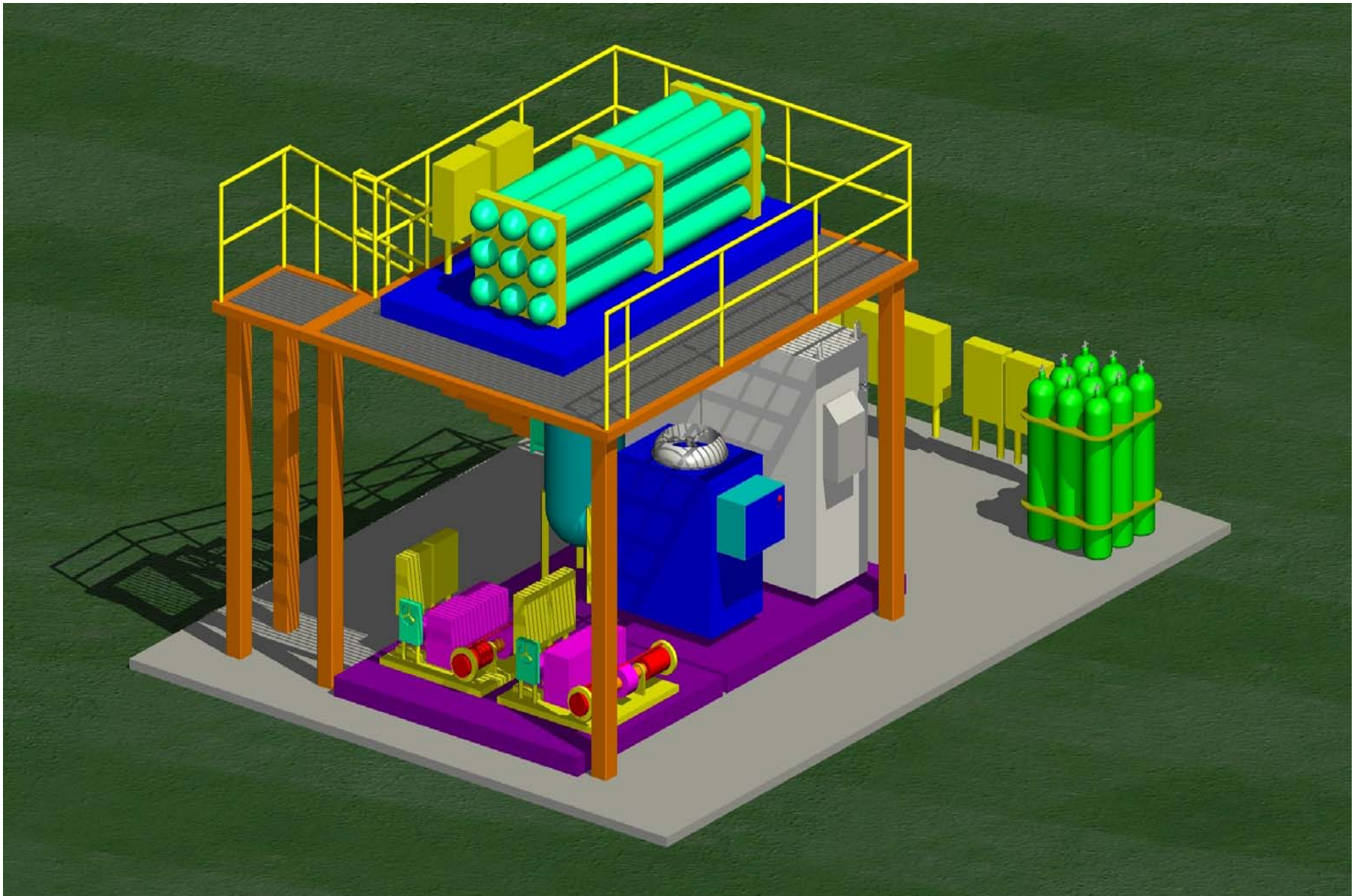
22 ft



Plan View 2nd Level



Plan View 1st Level



Hydrogen Production & Storage



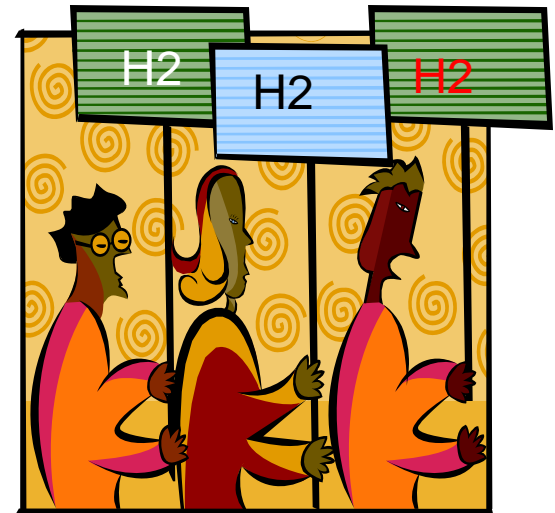
# West Virginia Hydrogen Business Leadership

- Attract Innovators Seeking Tech Val
- Attract Fuel Cell Companies
- Attract Fuel Cell Project Developers
- Identify Local Partners For Early Adopters
- Commercialization Initiatives Post NETL



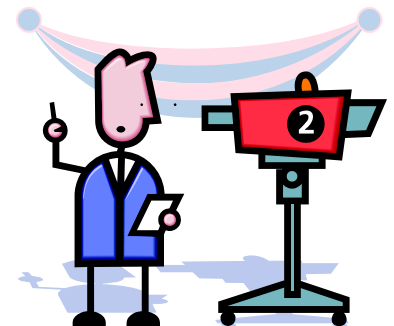
# Community Support

- Public Learns About Hydrogen
- Welcomes H2 Facility
- Public Experience With H2 Power
- Participates In Trials Of Commercial Products
- Supports H2 Stimulus Policies
- Patronize Lead Adopters



# Public Acceptance Of Hydrogen

- Education
- Friendly Site
- Schools Active
- H2 Project Participants Expressive
- Business Community Expressive
- Press Coverage



# Consensus Resolution

## Declare Hydrogen Is A Safe Fuel

This Resolution Is  
Supported By A Growing  
Number Of Stakeholders !!



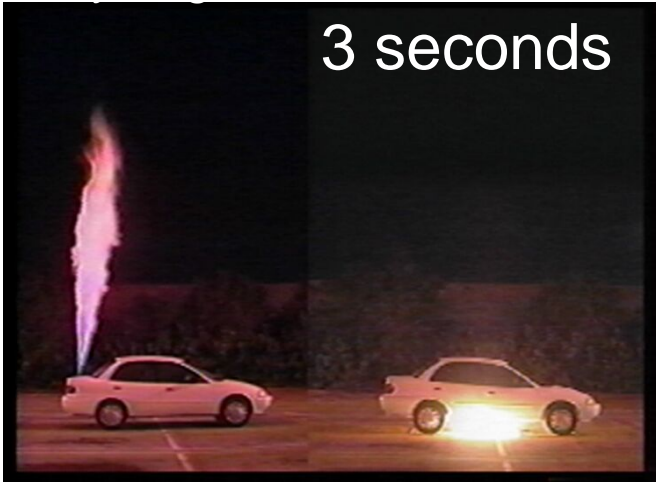
# Hydrogen Safety

- Not Explosive In Open Air
- Not Decomposing
- Not Self-Igniting
- Not Oxidizing
- Not Toxic
- Not Corrosive
- Not Polluting
- Not Cancer Causing



# Hydrogen Safety

3 seconds



- Fuel leak simulation
  - Hydrogen on left
  - Gasoline on right
  - Equivalent energy release

1 minute



- Single-mode failure assessment

Which car would you rather be in?

# 5<sup>th</sup> Annual Hydrogen Implementation Conference

- Strongly Articulated Coal – H<sub>2</sub> Connection
- Presented Hydrogen Business Progress
- Technology Innovations Briefed
- Hydrogen Safety Resolution
- Connected Hydrogen To Carbon Mgmt
- International Support For Hydrogen



# 5<sup>th</sup> Annual Hydrogen Implementation Conference

- August 18-20, 2009 in Charleston, W.V.
- Need Sponsors
- Need Committee Members
- Need Endorsements
- Need Utility



**RDTE Platform At Yeager Operational !!!!**



# Hydrogen Energy Incentive Concepts

- Liability Limitations
- Strict Timetables For Regulatory Approvals
- No Special Licenses Or Bonds
- Exemptions From Fuel Tax
- Exemptions From Property Tax
- H2 Production & Use Designated RPS Compliant
- EPA Preference
- State As User
- Encourage National Guard Use

