

Public Facing Safety and Education for Hydrogen Fueling Infrastructure

Jake Grant

Ready For Operations (RFO) Engineer

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www.htec.ca

Agenda



Section 01	Introduction
Section 02	The Public's View of Hydrogen
Section 03	Canada's Hydrogen Opportunity
Section 04	Risks and Safety Designs
Section 05	Contractor Safety
Section 06	Public Education

HTEC By The Numbers



>5 years

Experience in operating H₂ refueling station



5

Open H₂ stations across BC network



989 hours

Safety training hours completed in 2023



>75,000

KG of hydrogen delivered & dispensed
avg 80kg/day



>1,000

Tonnes of CO₂ abated



7

Life Saving Rules

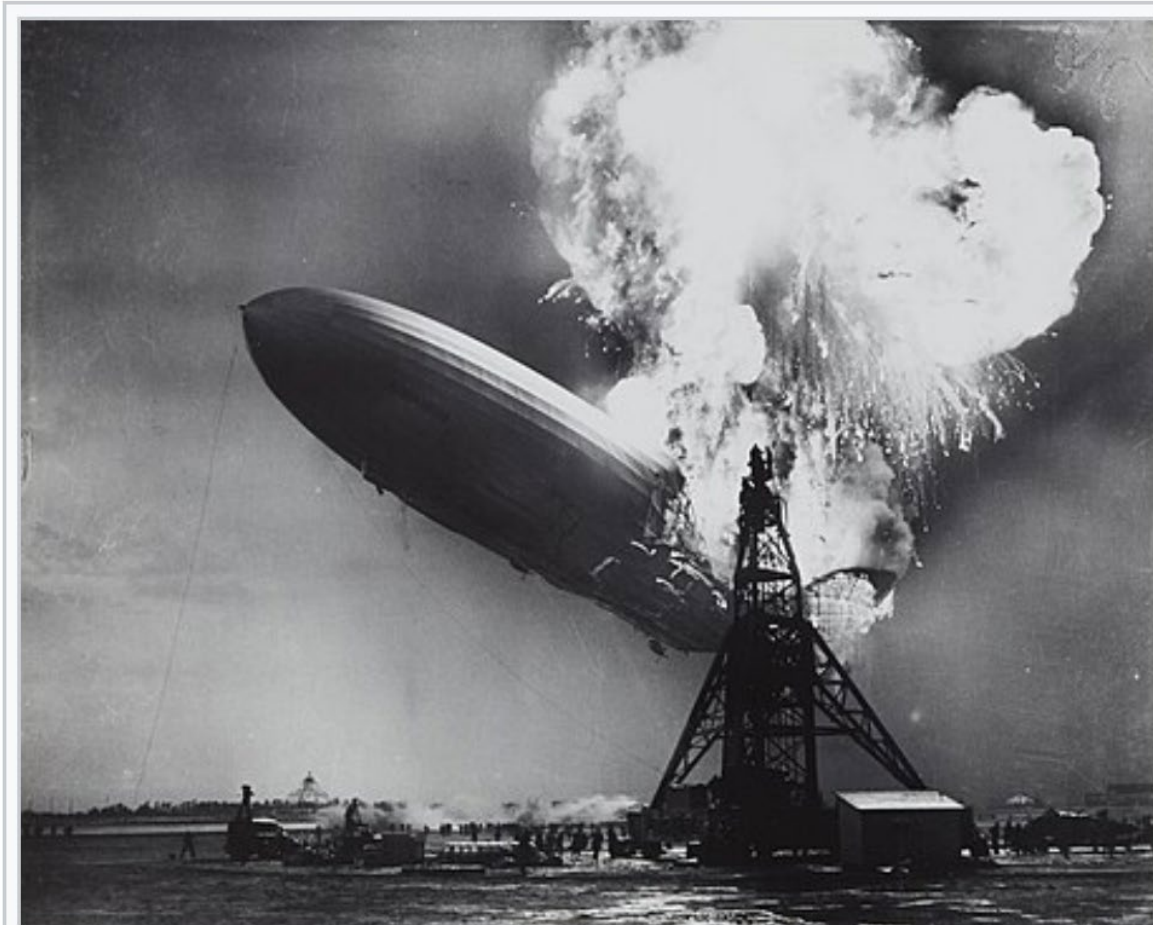



About Me

- Ready for Operations (RFO) Engineer
- In the hydrogen industry for 4 years
- Commissioned 6 (and counting) hydrogen stations
- Part of a 120+ team at HTEC



The Narrative We Need to Change



The [Hindenburg disaster](#) is an example of a large hydrogen explosion. 

The first image on the Hydrogen Safety article of Wikipedia

Canada's Hydrogen Car Opportunity

- Government of Canada mandated all light-duty vehicles be zero emission by 2035
- Battery EVs cannot fill this gap alone
- Hydrogen cars have advantages – particularly in Canada
- Hydrogen adoption will be affected by how the public sees hydrogen safety



Hydrogen Value Chain



CLEAN ENERGY
SUPPLY



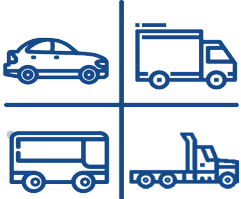
PRODUCTION



DISTRIBUTION



DISPENSING
STATIONS & SYSTEMS



CONSUMERS

What the public sees



Main Risks at the Fueling Station

- High pressure
- Flammable
- Difficult to detect flames
- Hydrogen embrittlement
- Hydrogen leaks – make all these worse



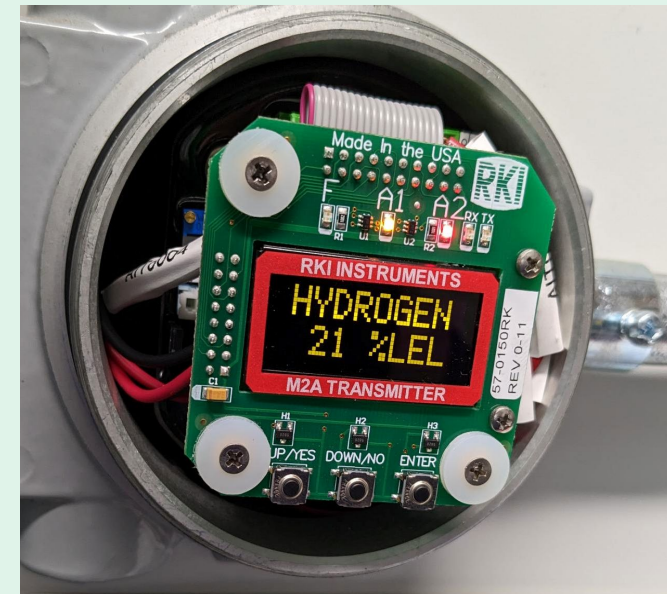
Hydrogen flames are nearly invisible

Hydrogen Station Safety Design

- Reduce leak points
- Infra Red flame detection
- Hydrogen sensors
- Leak monitoring
- Emergency shutdown
- Trained personnel



Flame Detector



Hydrogen Sensor

Contractor Safety

- Hydrogen awareness training
- Highlight the differences between H₂ and other fuels
- Factors and risks during operation and maintenance
- Life Saving Rules for HTEC and external contractors



Hydrogen Compressor Maintenance

Public Education

- **Work to inform the public**
 - outreach and tutorials
- **Public vs industry knowledge**
 - keep it simple
- **Trust and transparency**
 - being open about safety
- **Hydrogen incidents**
 - learning from our mistakes on a global scale



Hydrogen Station Tour at hy-fcell Conference 2023

Thank you!

