

ANAEROBIC DIGESTION SYSTEMS – DECODING THE CODES

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Agenda

- Introduction to the Digester Code
- Evolution of the Digester Code
- Regulatory bodies
- Other relevant codes & regulations
- Recent updates in implementation
- Role of the TSSA
 - Application & Appeals

Digester Code:

CAN / CGA B-105-M93: CODE FOR DIGESTER GAS AND LANDFILL GAS INSTALLATIONS

NATIONAL
STANDARD
OF CANADA

CAN/CGA-B105-M93

SUPERSEDES CAN/CGA-B105-M87

CODE FOR
DIGESTER GAS AND
LANDFILL GAS
INSTALLATIONS

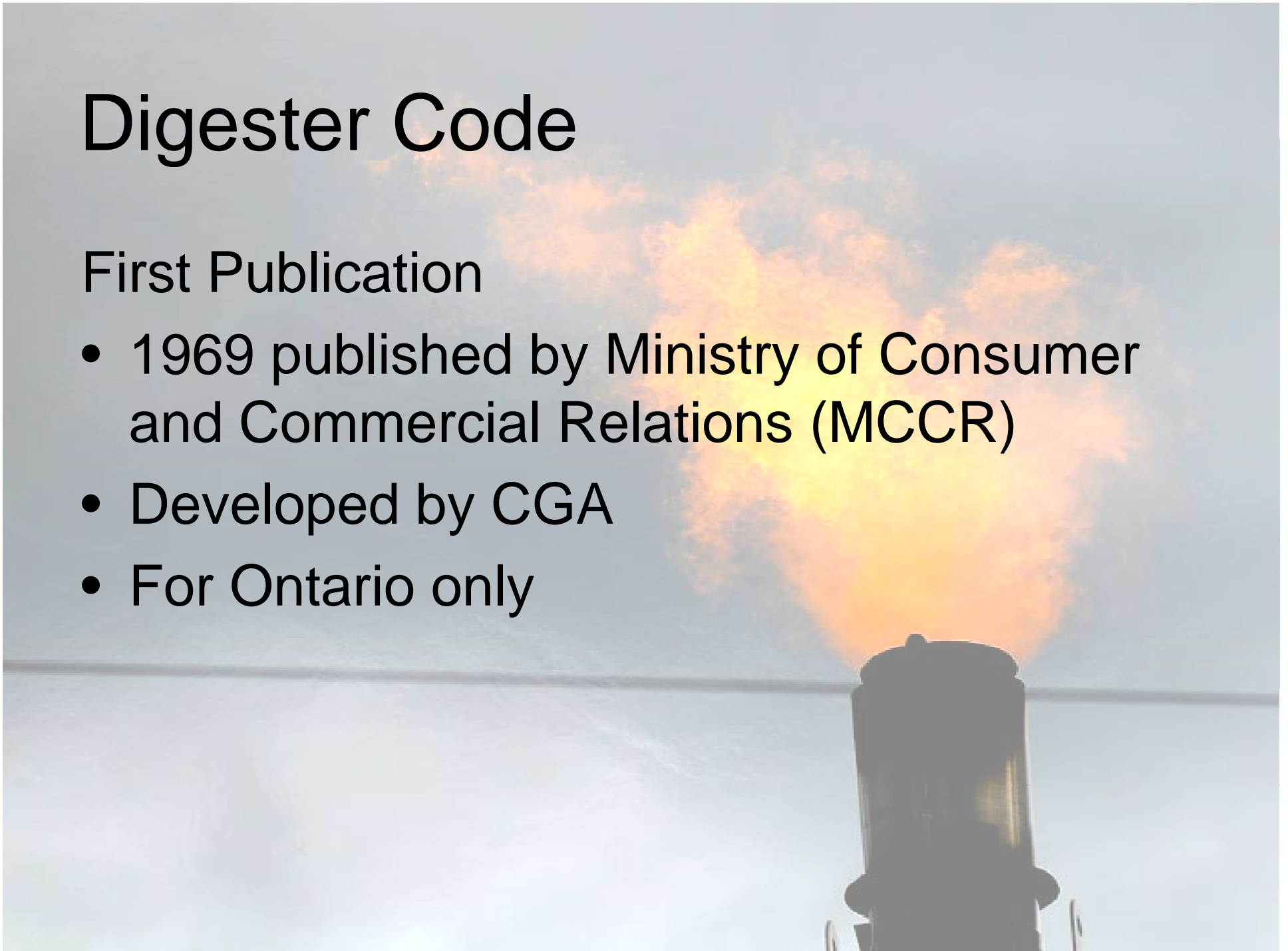


CANADIAN GAS ASSOCIATION

Digester Code

First Publication

- 1969 published by Ministry of Consumer and Commercial Relations (MCCR)
- Developed by CGA
- For Ontario only



Digester Code

Purpose:

- Safety – protect workers & public
- Establish minimum standards
- Production, storage, handling, utilization of digester gas at wastewater treatment plants
- Applies to existing and new facilities

Digester Code

Content:

- Definitions, abbreviations, etc
- Component standards
- Material standards
- System safety features:
 - Gas detection, alarms, thermal shut-off valves, etc.
- Testing requirements
- Operation and Maintenance requirements



Digester Code

Committee Representation:

- Enforcement agencies
- Facility designers
- Municipalities & facility owners
- Equipment supplier / manufacturers



Evolution of the Digester Code



- First publication 1969
- First revision 1973
- Second revision 1977
- Issued in 1981 as a National Standard
- Further updates in 1988 and 1993
- Update scheduled for 2011 -2012

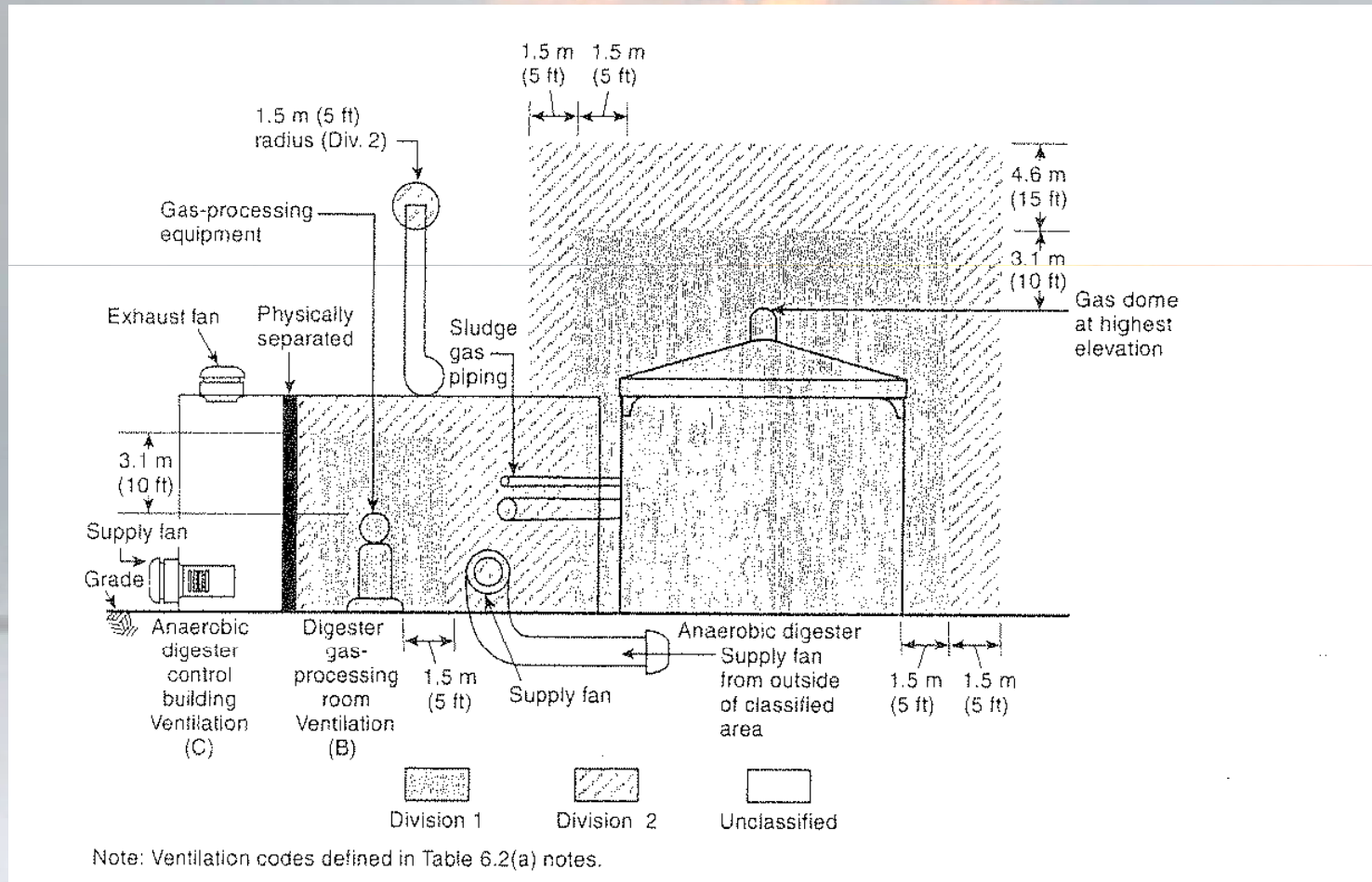
Other Relevant codes & standards

- Canadian Standards Association (CSA)
- Electrical Code
- NFPA-820:
 - Standard for Fire Protection in Wastewater Treatment and Collection Facilities
 - Established as an American standard
 - Referenced in Building Codes
 - Enforced under building permit, site plan approvals
- Building Code
- Plumbing Code

Digester Code vs NFPA-820

	<u>Digester Code</u>	<u>NFPA 820</u>
1. Classified areas	Classifies digester gas handling room as Class 1, Div 2.	Classifies areas in and around digester gas handling rooms.
2. Ventilation Rates	Digester gas handling room at 5 and 10 acph	Rate varies depending on area classification (for digester gas handling room 6-12 acph).
3. Gas handling equipment	Specific requirements regarding the set-up and maintenance.	Not part of NFPA
4. Gas Detection requirements & alarms	Specific requirements regarding the set-up and maintenance.	Not part of NFPA
6. Materials	Equipment, piping, fittings only	Building materials only

NFPA Area Classification

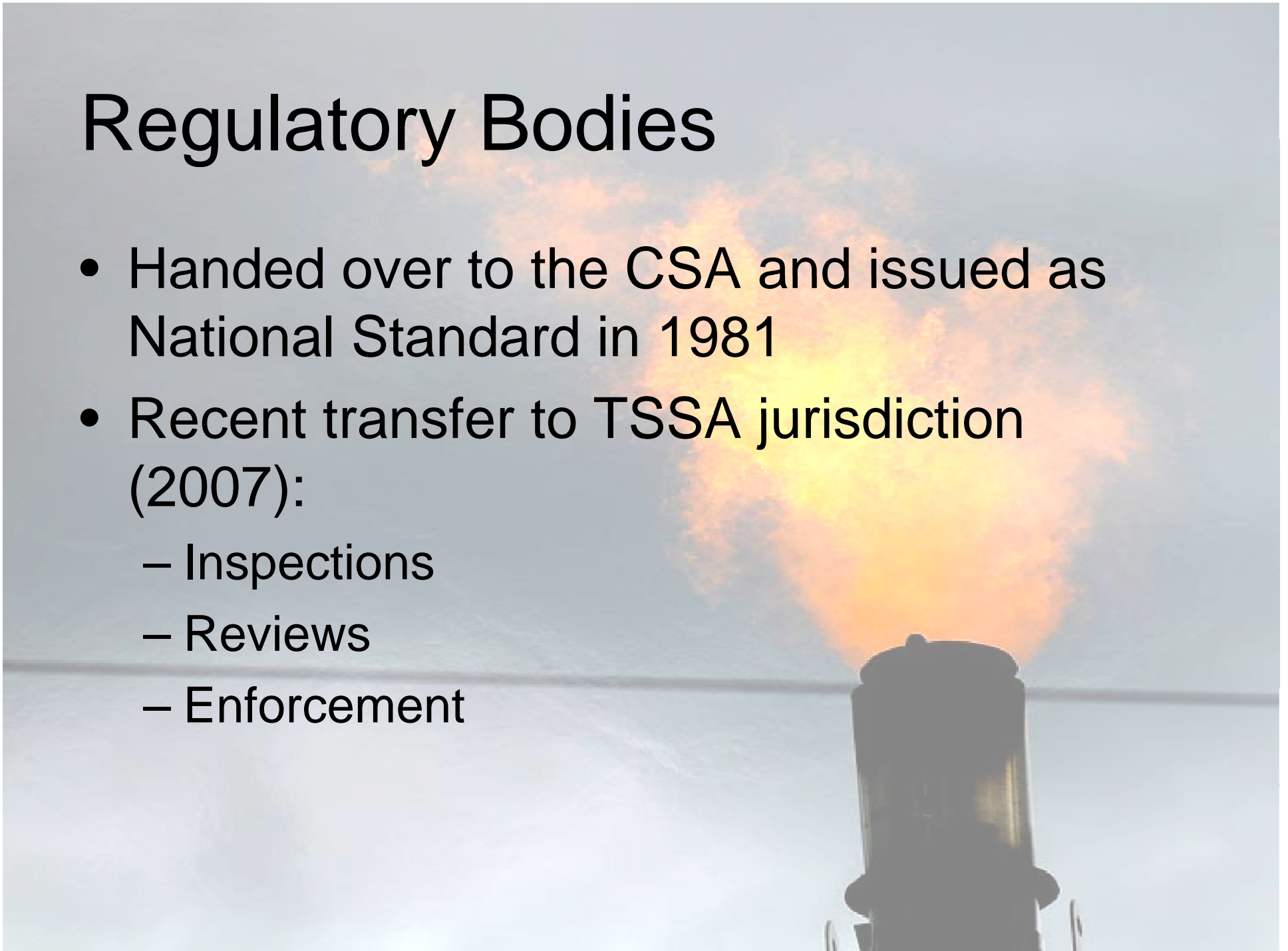


Regulatory Bodies

- Original enforcing agency: MOE
 - Certificate of Approval
- Assistance of CGA
 - Inspection & reviews
- MOE developed the “Anaerobic Digester Design and Installation Guideline” in 1983 and assisted in developing CGA Digester Code

Regulatory Bodies

- Handed over to the CSA and issued as National Standard in 1981
- Recent transfer to TSSA jurisdiction (2007):
 - Inspections
 - Reviews
 - Enforcement



Technical Standards & Safety Authority (TSSA)



- Primary focus: SAFETY
- Not-for-profit
- Delegated authority in Ontario from the Ministry of Government and Consumer Services (MGCS)

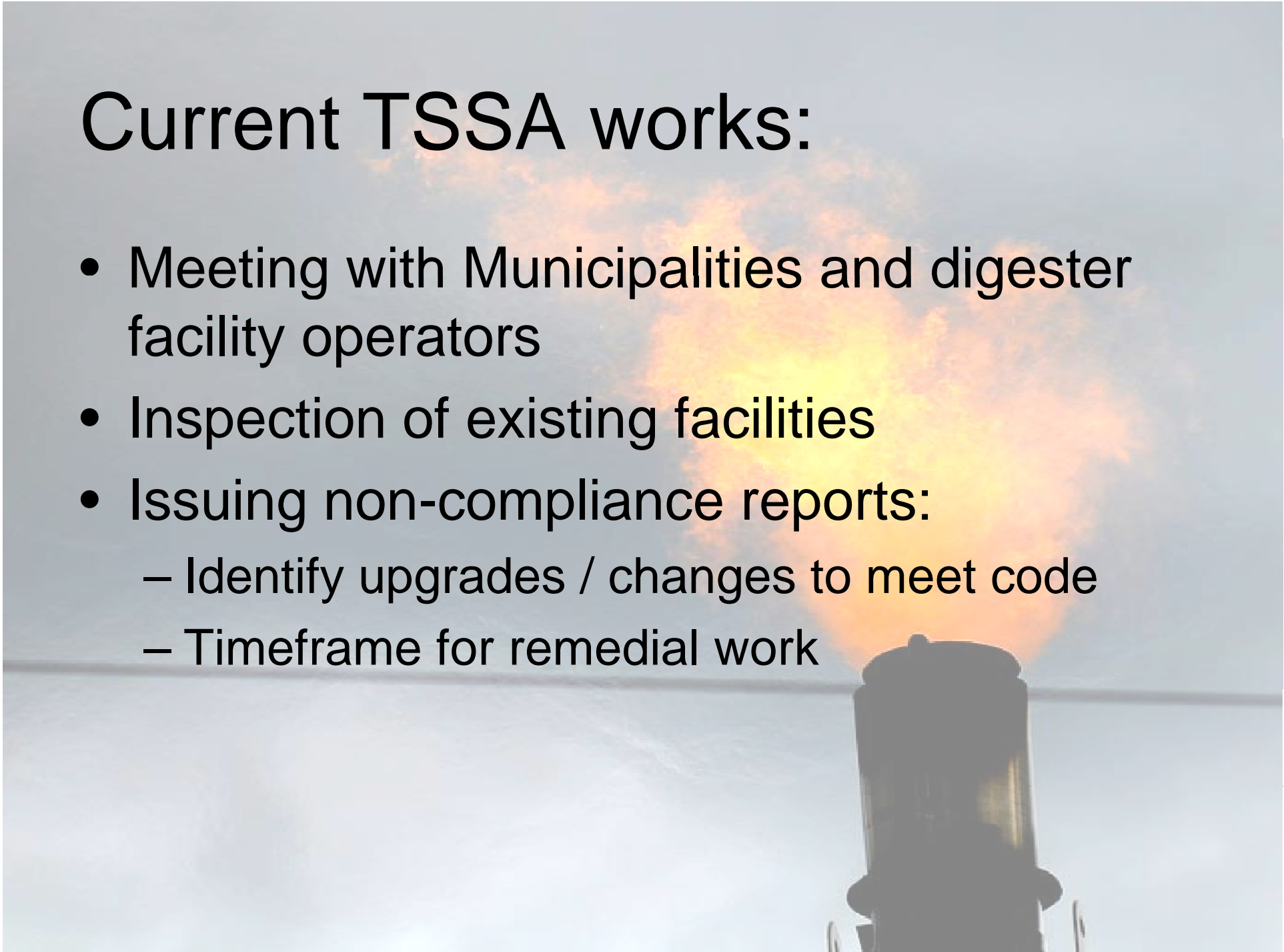
Role of TSSA

- Engineering review & approvals:
 - New facilities or upgrades
- Inspections:
 - Existing facilities
- Licensing, Registration & Certification
- Investigation & Prosecution



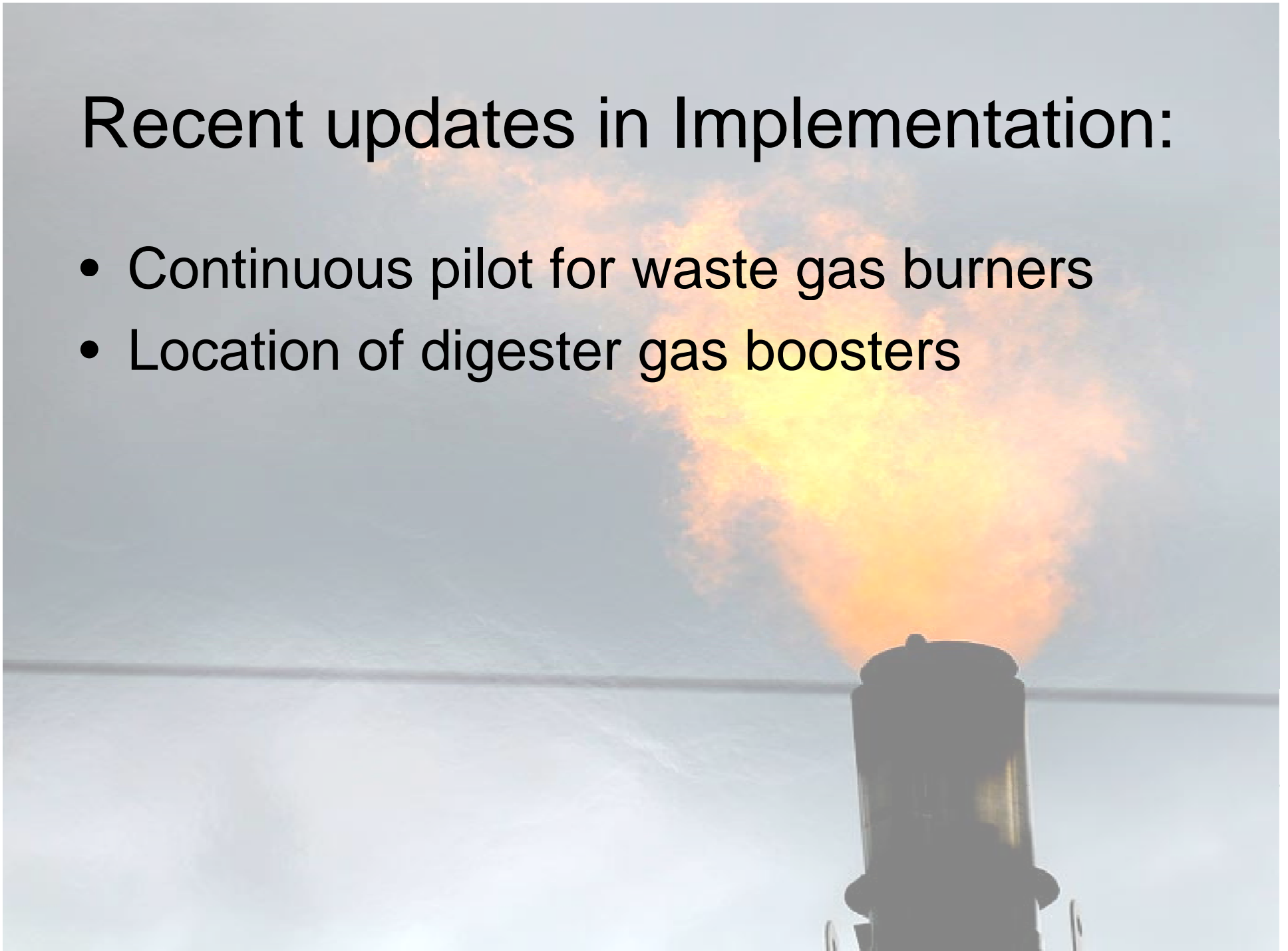
Current TSSA works:

- Meeting with Municipalities and digester facility operators
- Inspection of existing facilities
- Issuing non-compliance reports:
 - Identify upgrades / changes to meet code
 - Timeframe for remedial work



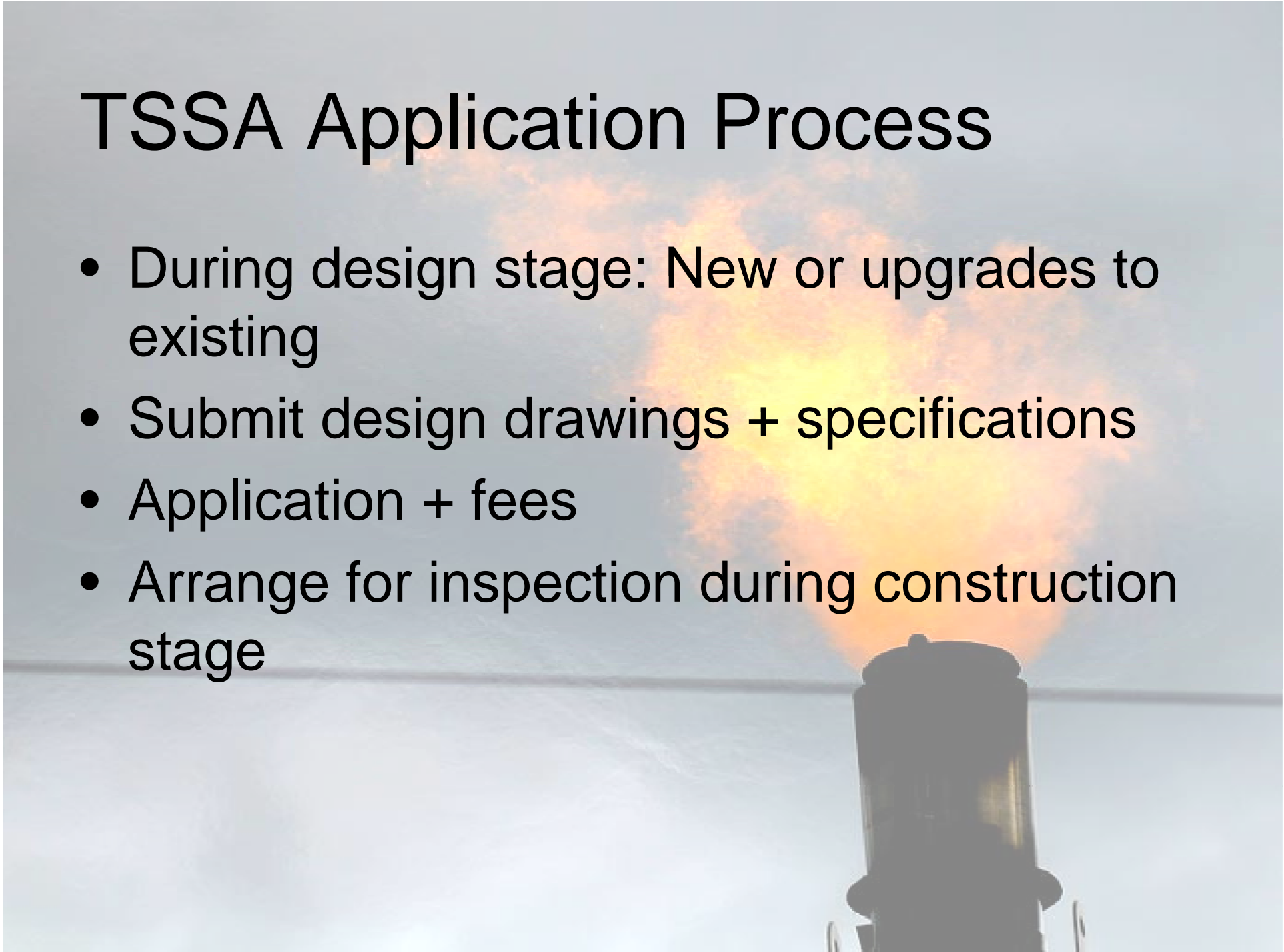
Recent updates in Implementation:

- Continuous pilot for waste gas burners
- Location of digester gas boosters



TSSA Application Process

- During design stage: New or upgrades to existing
- Submit design drawings + specifications
- Application + fees
- Arrange for inspection during construction stage



TSSA Appeal Process

- When upgrades are expensive / require time for engineering & design, Owner may file a Variance Report:
 - Specify items that cannot be completed
 - Temporary measures taken / proposed
 - Indicate proposed deadline
- TSSA reviews & responds

Acknowledgements

- Mr. Marvin Evans, Engineer, Fuel Safety Program, TSSA

