Policy Perspectives Session:

Using Next Generation Compliance Drivers in Permits and Rules

Advanced Monitoring, Remote Sensing, and Data Gathering, Analysis and Disclosure in Compliance and Enforcement Symposium

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New Approach: Next Generation Compliance

Regulation and Permit Design

Innovative Enforcement

Transparency

Advanced Monitoring

Electronic Reporting
Technology Opportunities

- Advances in information and monitoring technologies:
  - “make the invisible visible”
  - inform industry, government, and the public
  - enhance ability to prevent, reduce, treat or avoid pollution
  - drive compliance through transparency and accountability
The World is Changing: “Next Gen” is Everywhere
DARN IT—EVERY TIME I TRY TO TEXT, MY SMART CAR PULLS TO THE SIDE OF THE ROAD.
Common Causes of Environmental Noncompliance

- Costs often internal and immediate to regulated entity; benefits often long term and to public.
- Complexity
- Lack of awareness
- Disagree with the law
- “I’m special” or “Comply with spirit of law”
- Perceived norm of noncompliance
- Some competitors not covered by rule
Developed Principles and tools for Designing Effective Rules & Permits

- Leverage advances in:
  - Information technology
  - Advanced Monitoring
  - Social science
  - Best practices

What Gets Measured Gets Done
Overview: 5 Principles for Designing Effective Regulations and Permits

1. Applicability and simplicity

2. Structural: compliance easier than noncompliance

3. Self-monitoring and third-party monitoring

4. E-Reporting and transparency

5. Market forces and incentives
Principle 1 - Enable everyone to easily identify who is regulated and the applicable requirements

A. Focus regulatory requirements on fewer, better defined “upstream” sources
B. Use clear and objective regulatory requirements
Clear and Objective Requirements vs Precision/Complex

**SPEED LIMIT**

80

If between 25 and 80 years old, with at least 5 years of safe driving as defined by an approved state program, and 20/20 vision as determined by a licensed eye professional; or if certified as a professional driver pursuant to 40 CFR 12(b)(2)(ii)(a)(x)(b). Except if driver has had less than 6 hours of sleep the prior night or has been driving for more than 12 hours in the prior 24 hours, then 65 mph, unless following state-approved Best Driving Practices.

65

If between 21 and 85 years old with at least 2 years of safe driving as defined by the approved state program

55

All drivers who do not satisfy conditions for driving at higher speeds.
Principle 2 - Structure regulations to make compliance easier than noncompliance

A. Build in physical structures and product designs to make noncompliance difficult

B. Use immediate feedback technology

C. Build in self-implementing regulatory consequences to deficiencies and noncompliance
Automobile Design
Automatic Feedback Systems

- Software combined with hardware can:
  - Stop or modify operations
  - Send immediate alerts via email, text
- Can be combined with disclosure to leverage public accountability

pH meters are like teenagers
Principle 3: The 5Ws of Compliance Monitoring

- **Who**
  - Source performs
  - Independent third party

- **What**
  - Qualitative requirements
    - Quantitative

- **When** (frequency)
  - Continuous
  - Periodic
  - Upon occurrence of trigger event

- **Where**
  - Overall facility
  - Emission/discharge points
  - Fence line of facility (e.g., air monitoring)
  - Outside facility (e.g., downstream from discharge pipe)

- **Why**
  - Compliance driver: establishes minimum requirements for facility to focus on compliance
Example - Advanced monitoring in flare enforcement – ‘Estimating v. Knowing’ - Marathon and BP Whiting CAA CDs

PFTIR data showed that actual emissions (in red) at Marathon and BP were **10 times and 25 times greater**, respectively, than the companies’ best engineering estimates (in blue).
Principle 4 - Leverage accountability and transparency:

A. Electronic reporting to the government with smart tools to guide regulated entity.

B. Public accountability via websites, mailings, signage, social media.
Leveraging Transparency for Compliance

**Example** - NY State Sewage Pollution Right-To-Know Act

- New state law will require POTWs to electronically report sewage discharges to government *and* the public within four hours of discovery
Principle 5 - Leverage benefits, market forces, and other incentives that promote compliance

A. Empower the local community
B. Show investors and consumers when products and services are compliant
C. Harness market forces (e.g., emission reduction credits)
D. Provide and highlight benefits to regulated entities (e.g., energy efficiency)
CAA Acid Rain Program

- Pollution sources are assigned $\text{SO}_2$ allowances that may be bought, sold, or banked
- Electronic reporting, continuous monitoring, clear applicability