



Bureau of Safety and Environmental Enforcement

# **BSEE's Innovation Culture: Using Innovation to Balance the Historically Prescriptive Climate of Regulations**

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**6<sup>th</sup> Annual Composite Repair User's Group  
(CRUG) Conference & Exhibition**

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# Agenda

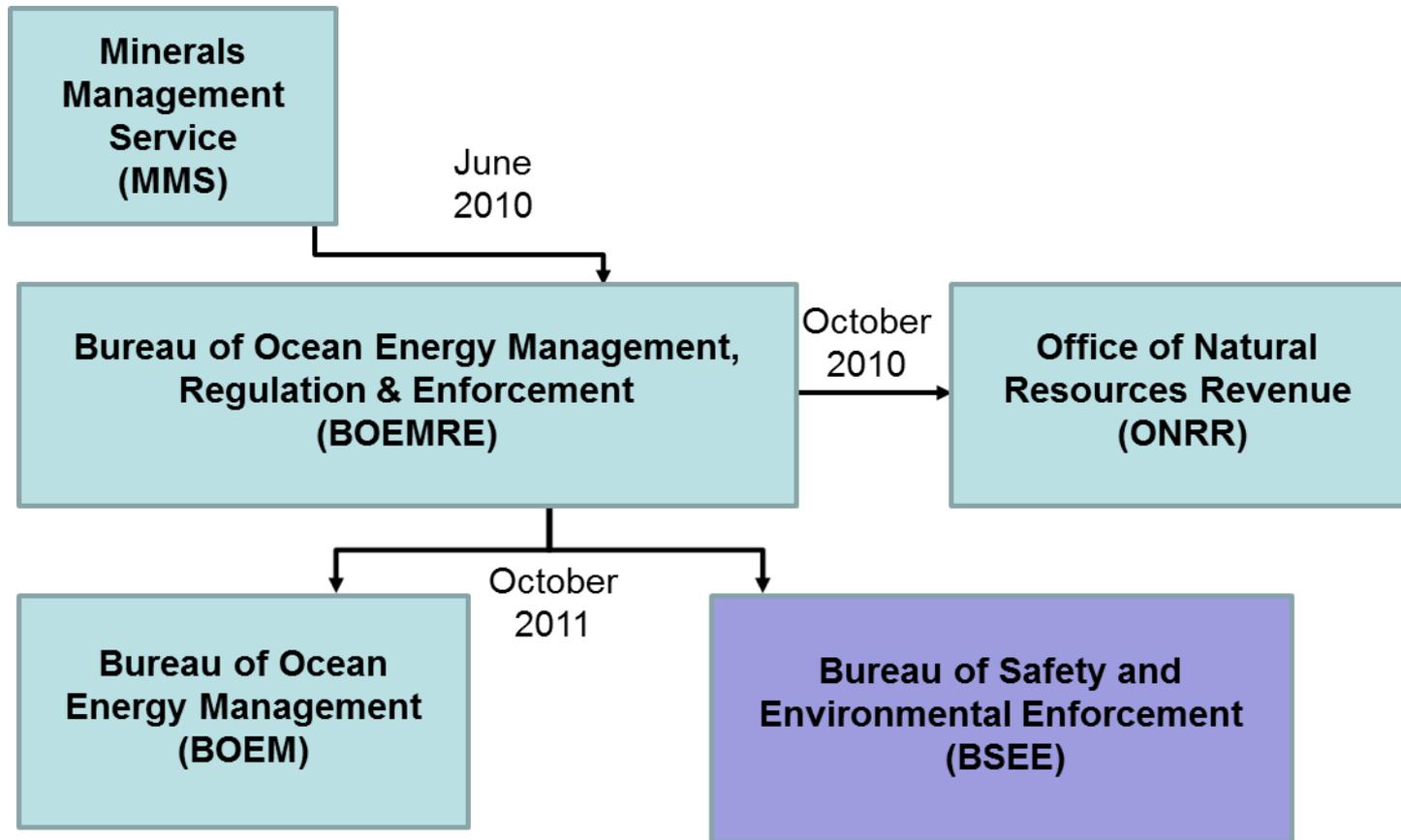
- BSEE Background
- Taxonomy: Innovation, Invention, Idea
- The impact of different regulatory regimes on innovation in the private sector
- The regulatory attributes that affect innovation
- BSEE's use of regulations to enhance innovation

“To promote safety, protect the environment and conserve resources offshore through vigorous regulatory oversight and enforcement.”

# BSEE Background

“To promote safety, protect the environment and conserve resources offshore through vigorous regulatory oversight and enforcement.”

# BSEE Organizational History



# BSEE Demographics

## Staffing:

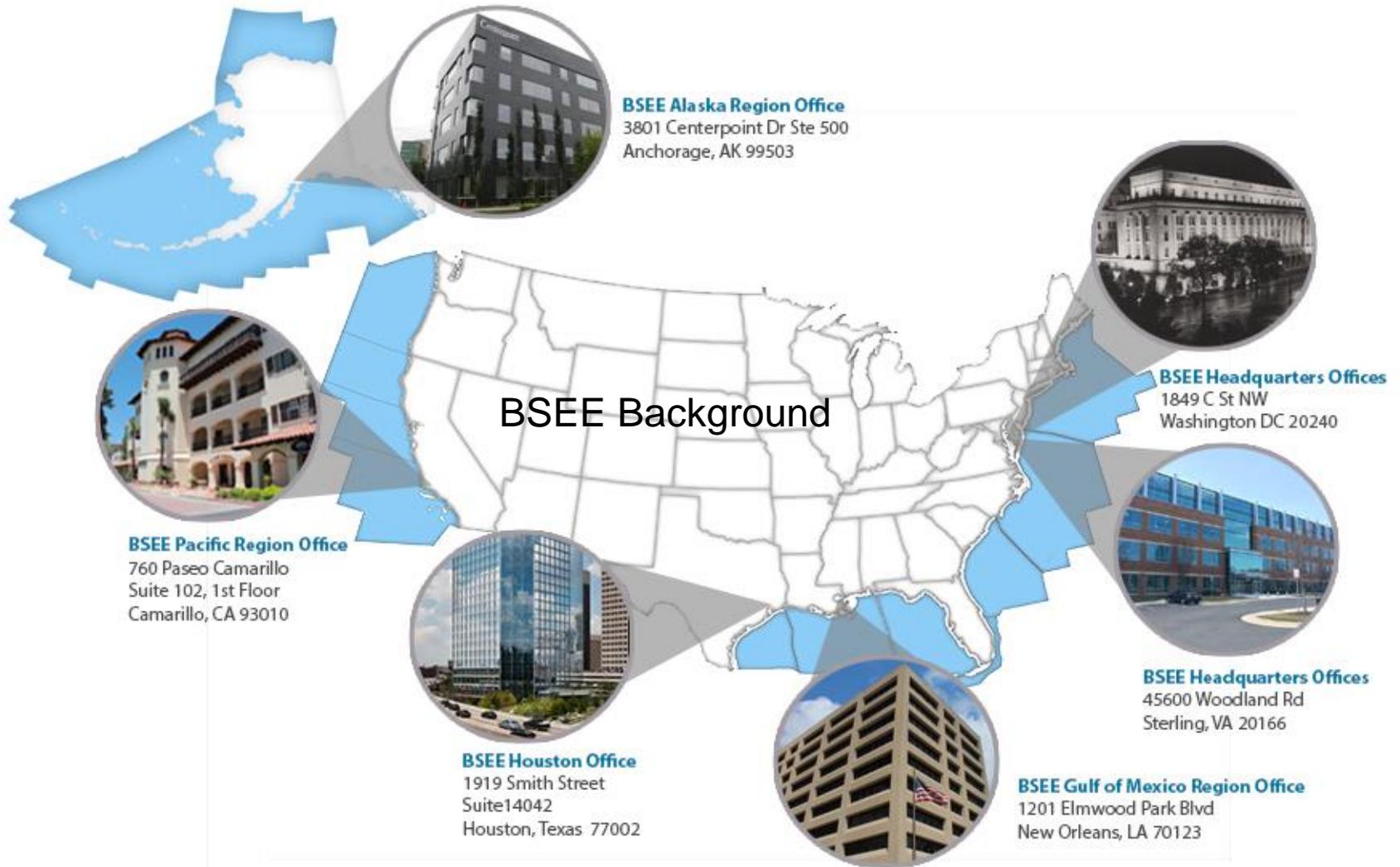
- 800 employees
- 170 engineers
- 110 inspectors

## Office Locations:

- Washington, DC, Sterling, VA, & Houston, TX
- Regional offices:
  1. Gulf of Mexico – New Orleans, LA
  2. Pacific – Camarillo, CA
  3. Alaska – Anchorage, AK



# BSEE Offices



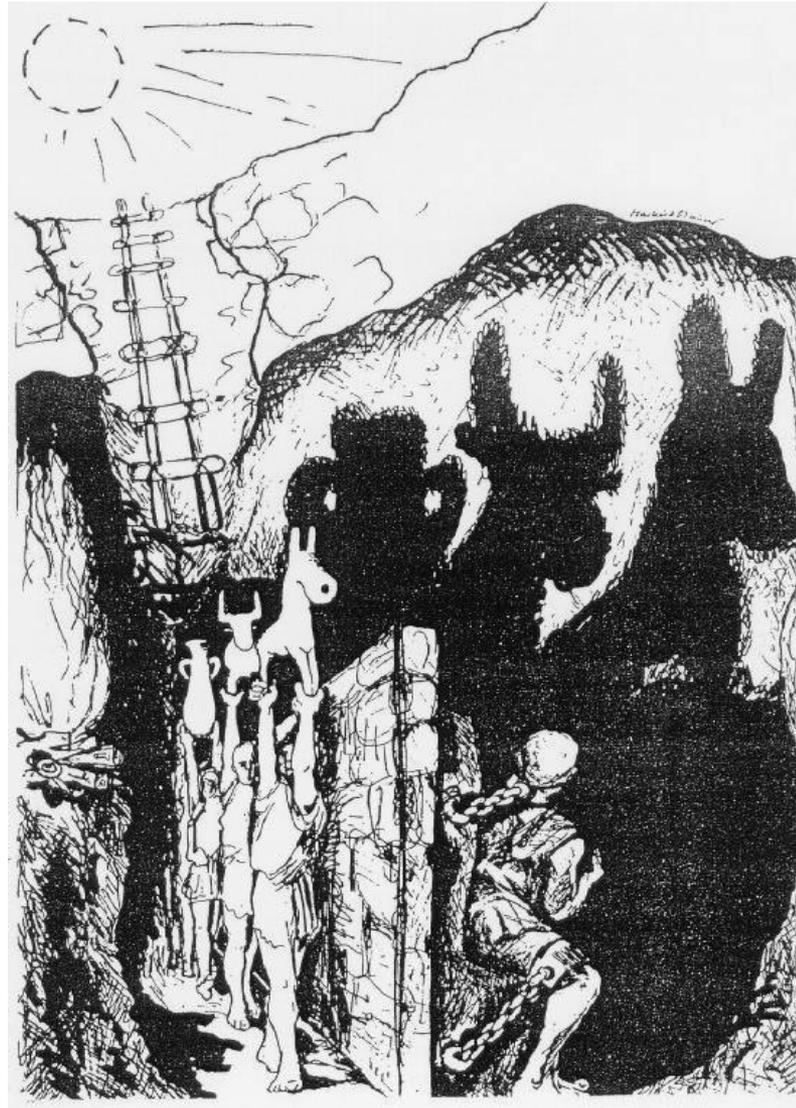
# Not BSEE's Innovation Culture





# Taxonomy: Innovation, Invention, Idea

# What is innovation, invention, idea?



Plato's "Allegory of the Cave"

From the Republic; drawing by Markus Maurer

# What is innovation, invention, idea?

I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description, and perhaps I could never succeed in intelligibly doing so.

**But I know it when I see it...**

*Justice Potter Stewart's concurring opinion in the 1964 case, *Jacobellis v. Ohio*, concerning the film "The Lovers."*

# Idea:

- 1 a transcendent entity that is a real pattern of which existing things are imperfect representations
- 2 a visible representation of a conception
- 3 an indefinite or unformed conception
- 4 a formulated thought or opinion
- 5 whatever is known or supposed about something

Per Merriam-Webster Dictionary





# **Invention:**

## **the initial development of an idea**

Patentable Invention must be:  
new, useful, unobvious

**Innovation:**

**the commercially successful  
application of an idea**

Let's see...  
faster than a speeding bullet...strength of a thousand men...  
can leap tall buildings in a single bound...  
very impressive resume.  
How are you with Excel?



Rico  
2012.  
rico@rico.co.za

*“Let's see ... faster than a speeding bullet ... strength of a thousand men ... can leap tall buildings in a single bound ... very impressive resume. How are you with Excel?”*



# **The impact of different regulatory regimes on innovation**

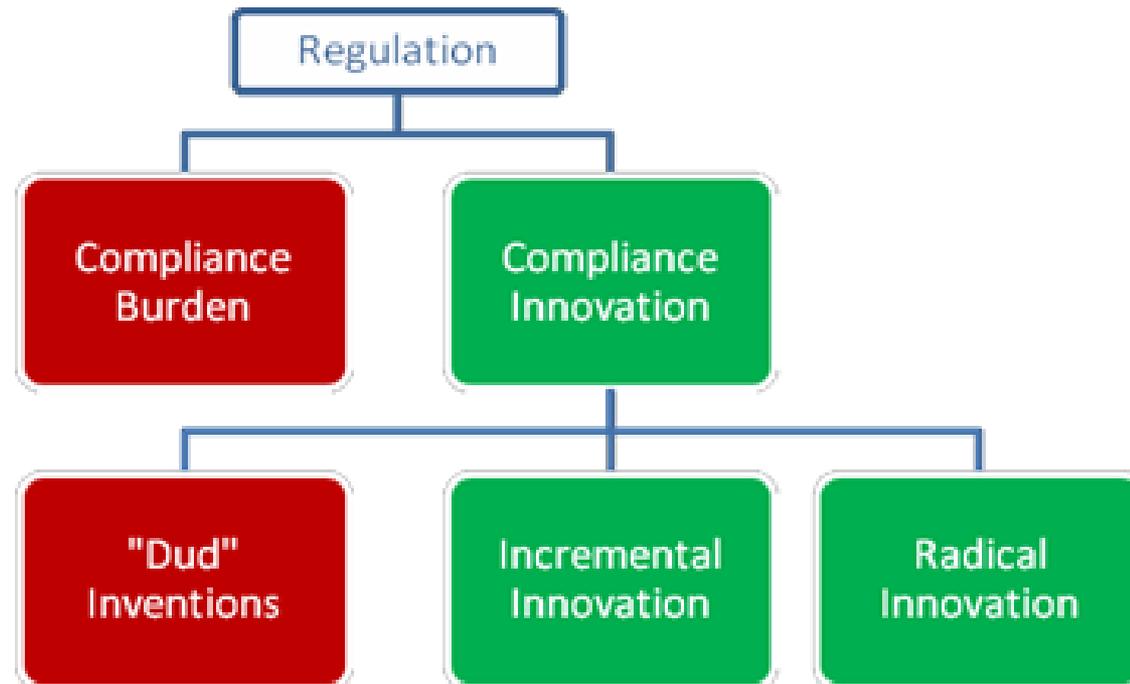
# Two Competing ways government regulation impacts innovation

- ***Compliance burden*** is a duty placed on firms, which can cause them to divert time and money from innovative activities to compliance efforts.
- ***Compliance innovation*** occurs when a regulation is sufficiently broad to allow a resulting product or process to remain within the scope of the regulation.
- *Circumventive innovation* occurs when the resulting innovation allows the firm to escape the regulatory constraints.

# Compliance Innovation occurs either incrementally or radically

- ***Incremental innovation*** occurs when firms make phased improvements to existing products or processes, thereby improving preexisting attributes in order to meet the minimum regulatory criteria.
- ***Radical innovation*** replaces existing products or processes.
- ***“Dud” invention or Un-innovation*** occurs when the idea is not commercially successful. Radical innovation is costly, risky, and often seeking the extreme resulting in no commercial viability.

Regulation imposes a compliance burden that may require innovation for compliance



Regulation that requires compliance innovation will result in incrementally new innovation, radically new innovation, or “dud” inventions.

# Summary of Effective Regulatory Impacts

- Regulations that are effective at stimulating innovation will tend to require compliance innovation
- Regulations that are effective will minimize the compliance burden and mitigate the risks of producing “dud” inventions
- Incremental innovation provides more reliable outcomes, and is typically more attractive to firms as a means to comply with regulation
- Radical innovation can yield more benefits than incremental innovation, but with higher cost and risk of producing “dud” inventions



# **The regulatory attributes that affect innovation**

# Regulatory Uncertainty: The Deal Killer

*Regulatory uncertainty* occurs when a firm or industry anticipates the enactment or implementation of a regulation at some time in the future.

**! WARNING !**



**TO AVOID INJURY**

**DON'T TELL ME HOW  
TO DO MY JOB**

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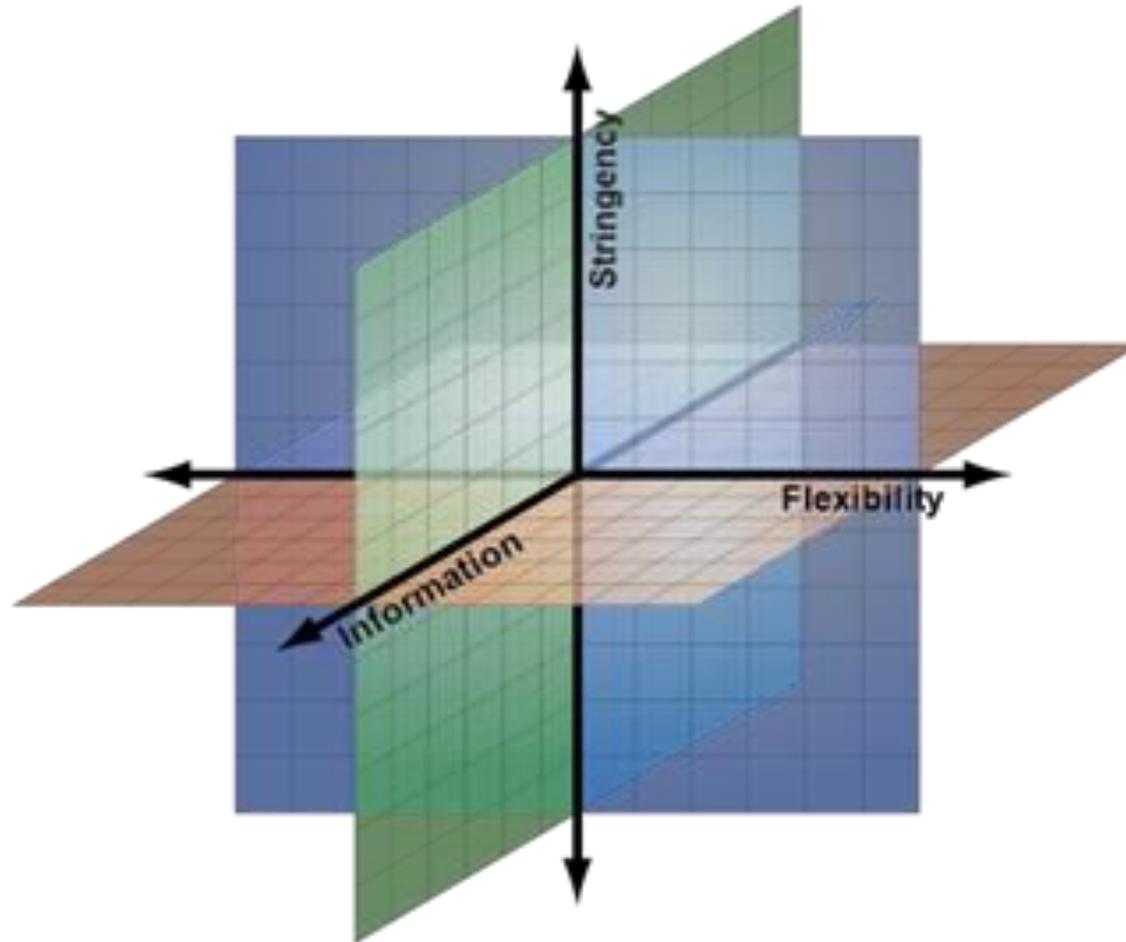
# The Effects of *Regulatory Uncertainty*

- may spur innovation prior to the regulation being enacted.
- may suspend investment in innovation until the regulatory uncertainty is reduced to a more comfortable level.

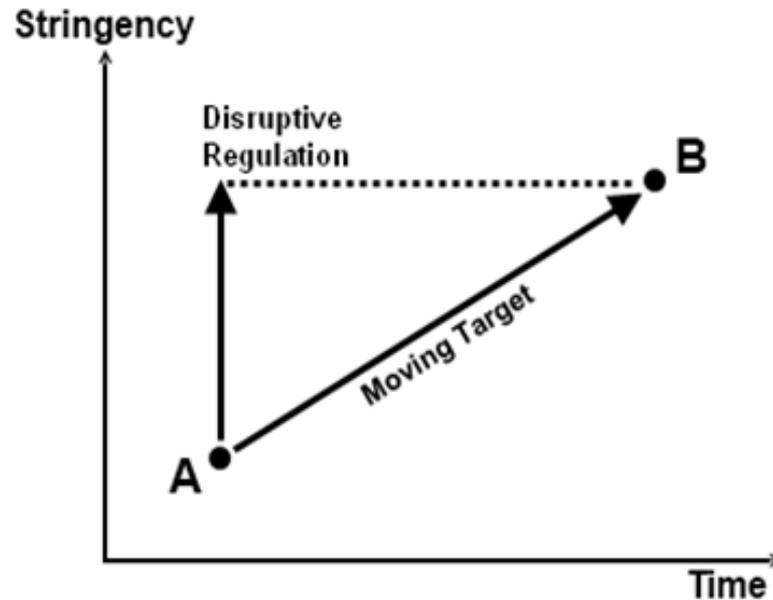
# The 3 “Innovation Dimensions” of Regulation

- ***Flexibility*** describes the number of implementation paths firms have available for compliance.
- ***Stringency*** measures the degree to which a regulation requires compliance innovation and imposes a compliance burden on a firm.
- ***Information*** measures whether a regulation promotes more or less complete information in the market.

**Regulation can change along  
the three “innovation dimensions”:  
stringency, flexibility, and information**



# The application of Stringency to regulation writing to promote Innovation



To achieve regulatory outcome B, regulators can:

- (1) employ a “moving target” to increase stringency gradually, or
- (2) enact “disruptive regulation” and fully increase stringency all at once.

**Industry tends to take the least costly and risky path.**

# The application of Flexibility to regulation writing to promote Innovation

A measure of flexibility pertains to the specificity of the regulation.

***Prescriptive regulations*** govern the material composition or the technical configuration of a product or process.

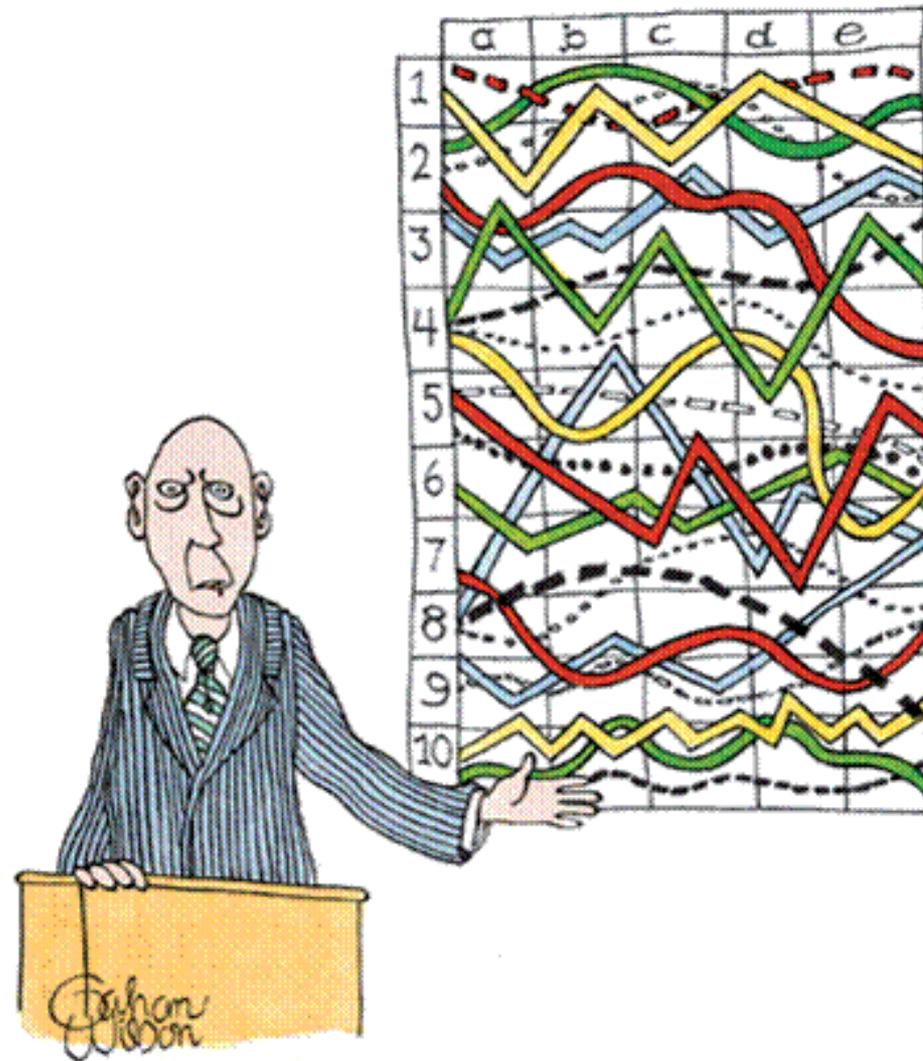
***Performance regulations*** set a benchmark for the performance of the product or process. They are more flexible than prescriptive regulations in that they allow firms to choose their own path to compliance.

# Benefits of Flexibility in regulation writing

1. reduce the compliance burden
2. reduce the probability that the firm will produce a “dud” invention

In both cases, the firm is required to be a more effective decision maker than the regulator.

I'll pause for a moment  
to let this information sink in.



*"I'll pause for a moment so you can let this information sink in."*

# SUMMARY

- Compliance burden.
- Compliance innovation:  
incremental innovation,  
radical innovation:  
dud inventions.
- Regulatory uncertainty:  
good - spurs innovation;  
bad - hinders innovation.
- How to use stringency, flexibility, & information  
in regulation writing to spur innovation.



# **BSEE's use of regulations to enhance innovation**

# Regulatory Challenges

- High activity level
- Low activity level
- Diverse operations
- Operating conditions
- Environmental conditions
- Range of technological needs

# Innovation Enhancing Regulatory Initiatives

- Best Available and Safest Technology (BAST)
- Safety and Environmental Management Systems (SEMS)
- Alternate procedures or equipment (30 CFR §250.141)
- Risk-based inspections and permitting

# What is BAST?

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Outer  
Continental  
Shelf  
Lands Act  
(OCSLA)

*“..on all new drilling and production operations and, wherever practicable, on existing operations, the use of the best available and safest technologies which the Secretary determines to be economically feasible, wherever failure of equipment would have a significant effect on safety, health, or the environment, except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies.”  
(43 U.S.C. 1347(b))*

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# BAST Program Objectives

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Compliance with statutory mandate

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Focus on technological solutions to safety issues

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Focus on critical safety equipment

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Establish performance levels based on evaluation of available technology

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Consistent and verifiable testing

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Transparent process

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Stakeholder engagement

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Satisfies cost/benefit

# **BAST will NOT result in:**

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Prescriptive requirements

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An automatic phase-out of existing technology

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An automatic review of existing systems and technology

# What SEMS is...

## What SEMS is not...

- **SEMS is not a compliance exercise.**
- **SEMS is a risk management practice.**
  
- **SEMS is not prescriptive**
- **SEMS is performance-based**

# Goals of the SEMS Regulation and of BSEE's approach to it.

- Implementation of a management system that identifies and mitigates risk in all operations on an OCS facility.
- Commitment to continual improvement in industrial practices to reduce the rates and severity of incidents.
- SEMS includes management of immediate and latent safety and environmental risks.

## **Achievements implemented by SEMS:**

- Embraced the management system approach
- Successes are recognized and shared
- Coordination with other regulatory authorities
- Reduced tendency to use, or revert to, less disciplined approaches

# Alternate procedures or equipment (30 CFR §250.141)

## §250.141 May I ever use alternate procedures or equipment?

You may use alternate procedures or equipment after receiving approval as described in this section.

(a) Any alternate procedures or equipment that you propose to use must provide a level of safety and environmental protection that equals or surpasses current BSEE requirements.

(b) You must receive the District Manager's or Regional Supervisor's written approval before you can use alternate procedures or equipment.

(c) To receive approval, you must either submit information or give an oral presentation to the appropriate Regional Supervisor. Your presentation must describe the site-specific application(s), performance characteristics, and safety features of the proposed procedure or equipment.

# BSEE Innovation

## Enhancing Regulations

- Best Available and Safest Technology (BAST)
- Safety and Environmental Management Systems (SEMS)
- Alternate procedures or equipment (30 CFR §250.141)
- Risk-based inspections and permitting

# Questions?



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BSEE Website: [www.bsee.gov](http://www.bsee.gov)



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Bureau of Safety and  
Environmental Enforcement

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“To promote safety, protect the environment and  
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