Closed Mixing System Regulations Proposal

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Background:

- Current regulations (CCR 6746) requires employers provide closed systems for employees who mix or load liquid pesticides in Toxicity Category One

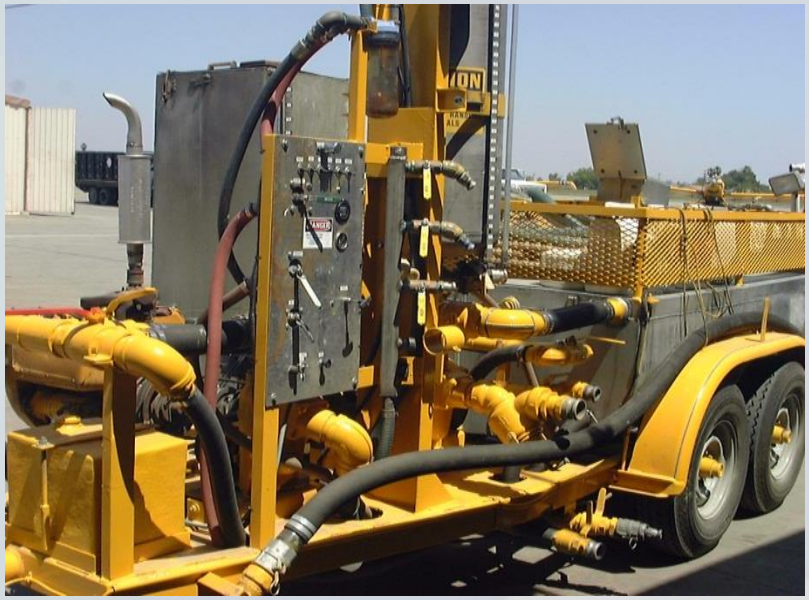
- Closed Systems engineering controls first considered in 1970's
  - Data showed a need to protect handlers from dermally-absorbed systemically-toxic pesticides.
  - Organophosphates and N-Methyl carbamates

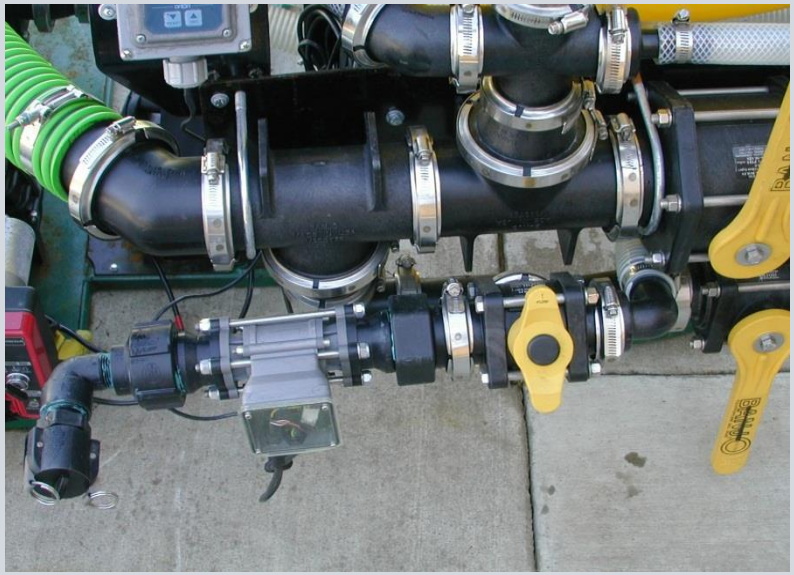
Problem:

- Use of systemically-toxic pesticide is far less today.
- Many pesticides are classified as toxicity category one based on hazards not mitigated with the use of a closed system, e.g., oral, inhalation and to some extent eye hazards.
- For a time in 2009, 2010 and 2011 no closed systems (or replacement parts) were commercially available.
- The current reference in the regulation (CCR 6746) to the "Directors Design Criteria" imposes a requirement on the regulated industry that could be considered an "underground regulation".

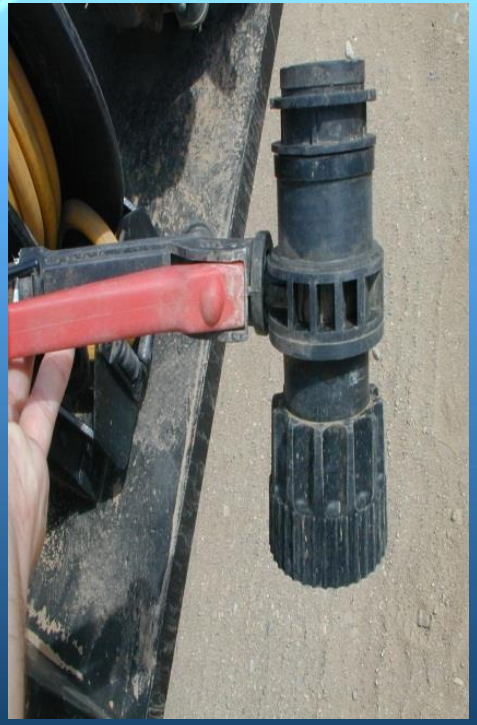
DPR Experience!

Complicated Systems





Systems Concerns



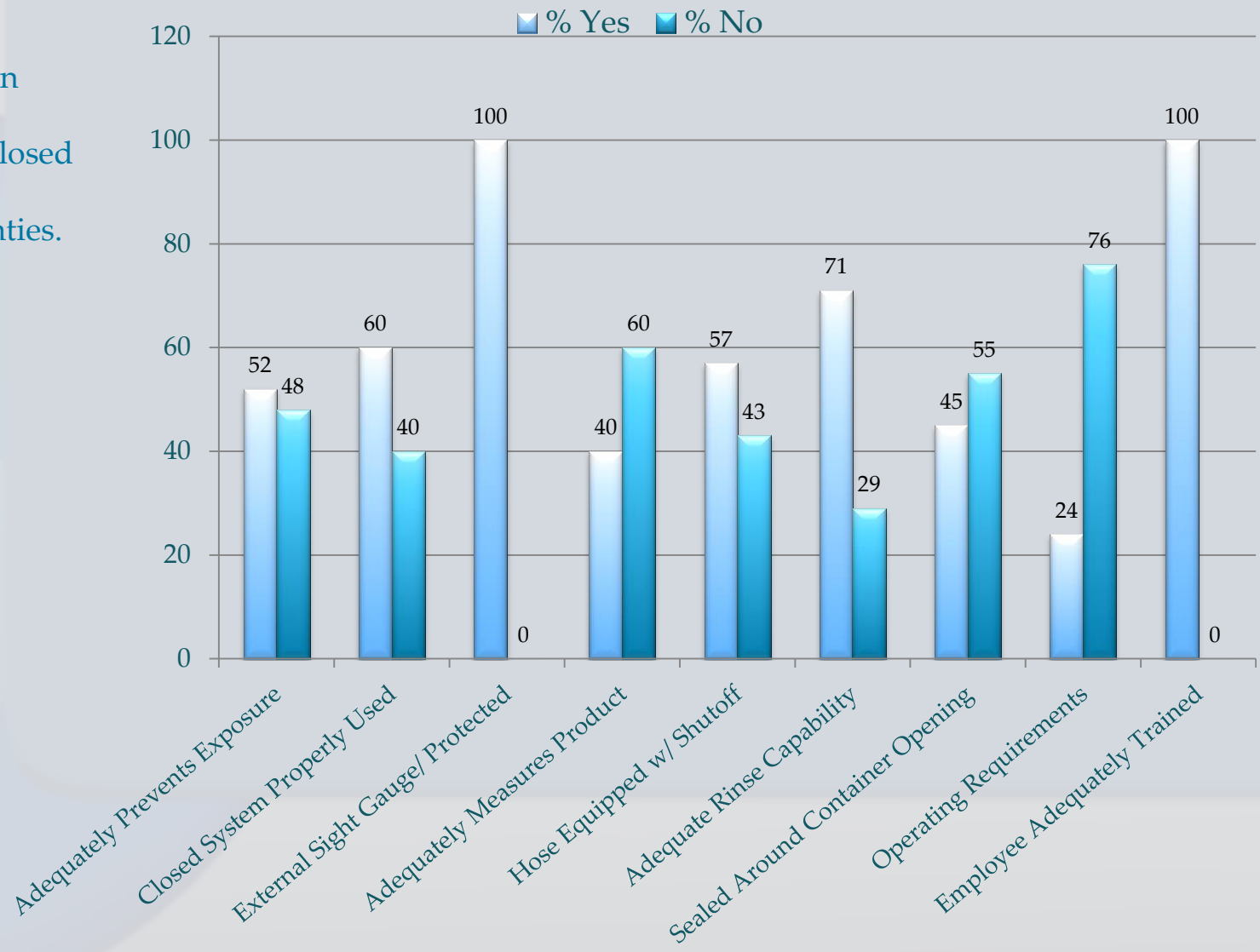
Systems no longer available

Systems not being used because replacement parts are not available

Container Rinsing has been a complicating factor.

Preliminary Survey Results

DPR has been conducting surveys on closed systems in various counties.



PROPOSED CHANGES…

Closed Mixing System Regulations

Concepts:

Concept 1

Change what dictates the requirement for closed systems. Rather than look at the signal word (Danger) refer to the pesticide label's **Human Hazard and Precautionary Statements**.

Concept 2

A two tiered approach:

- **Tier 1 - Fatal if absorbed through skin,**
- **Tier 2 - May be fatal if absorbed through skin**

  or **Corrosive, causes skin damage**

Tier 1 Verses Tier 2:

- "California-approved" closed systems must have integrated container rinsing capabilities
  - This additional standard complicates equipment designs particularly those used by smaller operators who often use only partial containers
  - Illness data implies the more complicated the device, the higher the potential for equipment malfunction

Closed Mixing System Regulations Concepts

Concept 3	Incorporate specific items from the definition (CCR 6000) and the existing director's design criteria.
Concept 4	Delete subsection 6793(d) (the requirement to provide a closed system for minimal exposure pesticides);
Concept 5	Specify the requirements apply only to the mixing of liquid concentrates (and rinsing when required) - not loading diluted mixtures, and
Concept 6	Delete the existing exemption for hand-pouring from a one gallon container for a Tier 1 product.

Exemptions

1. Mixing pesticides using a method or mixing device required by the registered label.
2. Opening of a container by removal of the manufacturer's original sealing device without removing any of the contents before re-closing with a liquid-tight sealing device.
3. Regulatory personnel collecting samples of pesticides.
4. Rinsing refillable containers
5. Employee's required to use a Tier 2 Closed Mixing system if handling a daily maximum of one gallon or less. (Must wear label PPE)

New Requirements

Eye protection

- Old regulations require eye protection when system is under pressure.
- The regulation will require eye protection while using the closed mixing system.

Operating Instructions

- Old regulations required that only commercially produced closed systems were required to have operating instructions.
- New regulations will require all closed mixing systems to have operating instructions.

UC Davis

Closed Systems Design and Operating Instructions

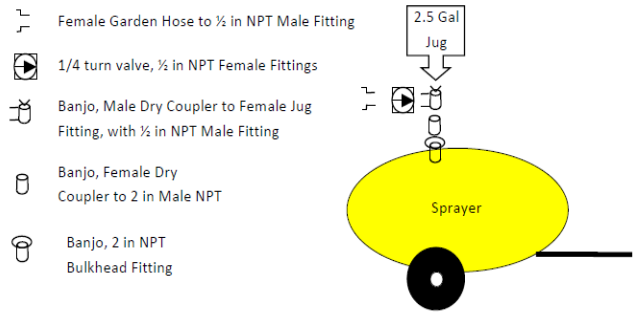


Figure 2. Basic closed system for loading and rinsing an entire container.

Parts list:

Part Number	Description	Quantity	Price ($)	Total ($)
70815T45	McMaster-Carr, Brass garden hose-to-pipe swivel adapter 3/4" NPTF Garden Hose to 1/2" NPTM	1	7.63	7.63
47865K23	MC Master, Brass Ball Valve 1/2" NPTF	1	9.84	9.84
CST200AR	Banjo, Closed Mix Adapter	1	110.32	110.32
CSTS200D	Banjo, Adapter W/2' Male NPT	1	183.86	183.86
TF200	Banjo, 2" Poly Bulkhead Tank Fitting	1	21.97	21.97
			Total	333.62

Building Demonstration Systems

Any Questions?