

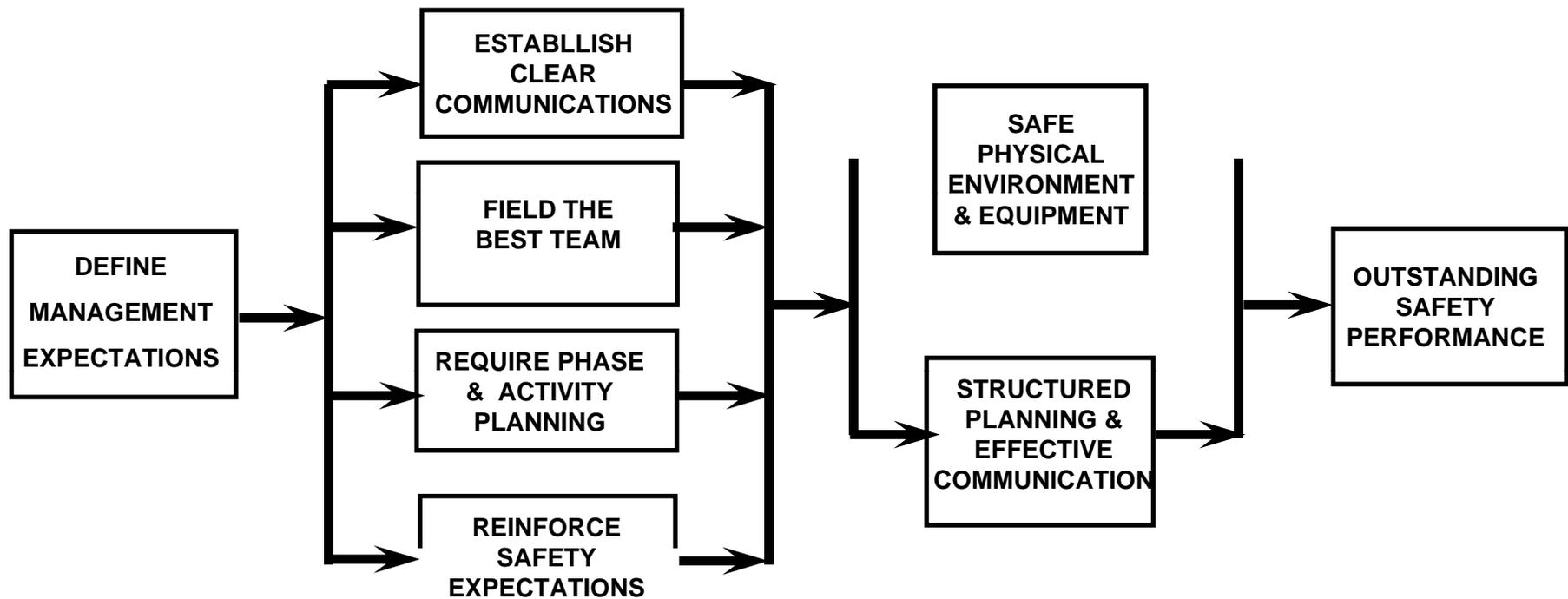
2009 LARGE FACILITIES WORKSHOP

Construction Site Safety

Richard Hislop



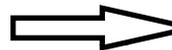
WORLD CLASS SAFETY PROGRAM STRUCTURE



The Essential Cornerstone



The Main Drivers



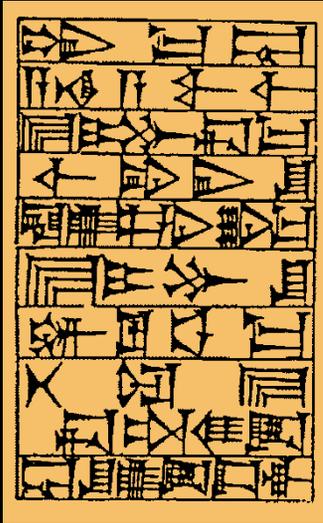
The Workplace Outcomes



The Result



ACCOUNTABILITY

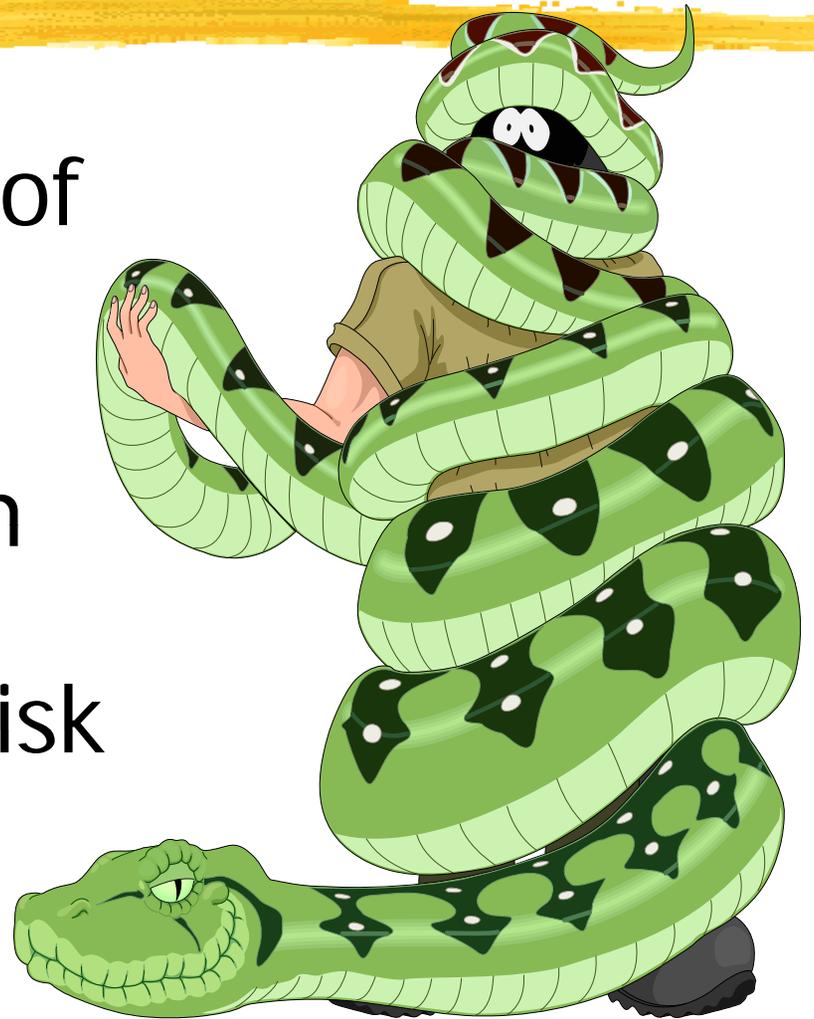


If a builder has built a house for a man and his work is not strong, and if the house he has built falls in and kills the householder, that builder shall be slain.

King Hammurabi of Babylon
18th Century B.C.

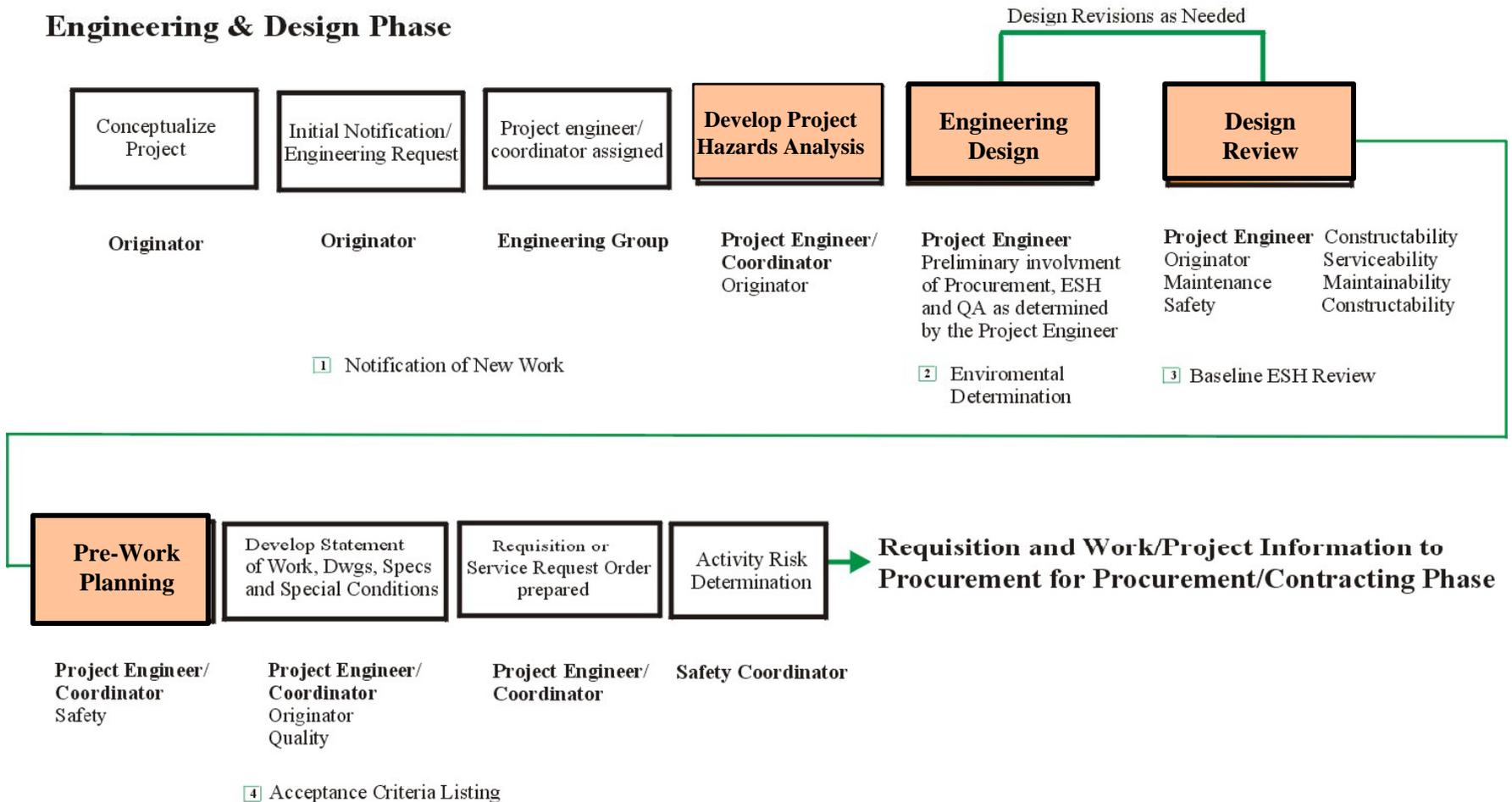
WHAT IS SAFETY ?

Safety is the Control of
Recognized
Hazards to attain an
Acceptable Level of Risk

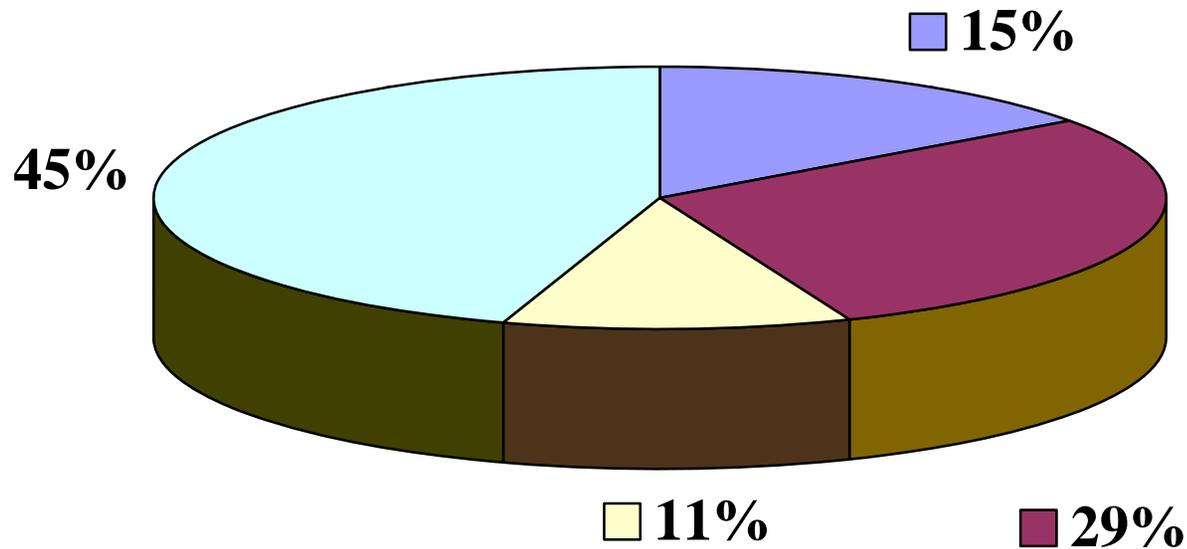


SAFETY IN THE PROJECT EVOLUTION

Engineering & Design Phase



DESIGNING FOR SAFETY



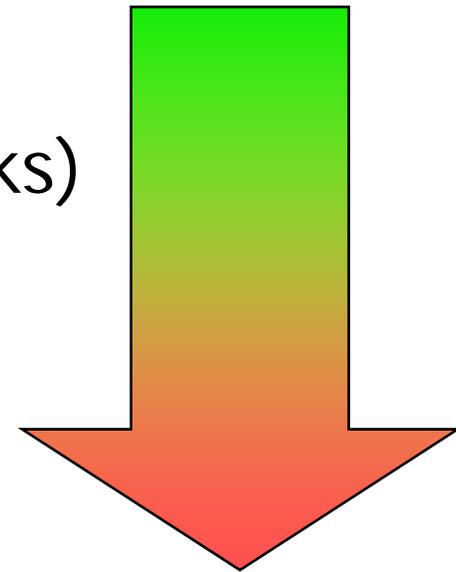
- Safety is considered in designer selection
- Designers are asked to address specific safety issues
- Designers may be asked in the future to consider safety
- Designers are not asked to consider construction worker safety

Construction Safety - Hinze 1994

HAZARD CONTROL HIERARCHY

- Elimination or substitution
- Engineering Controls
- Safety devices (guards, interlocks)
- Warning systems
- Administrative Controls (work methods, training)
- Personal Protective Equipment

Most Effective



Least Effective

Source: *Professional Safety* February 2003

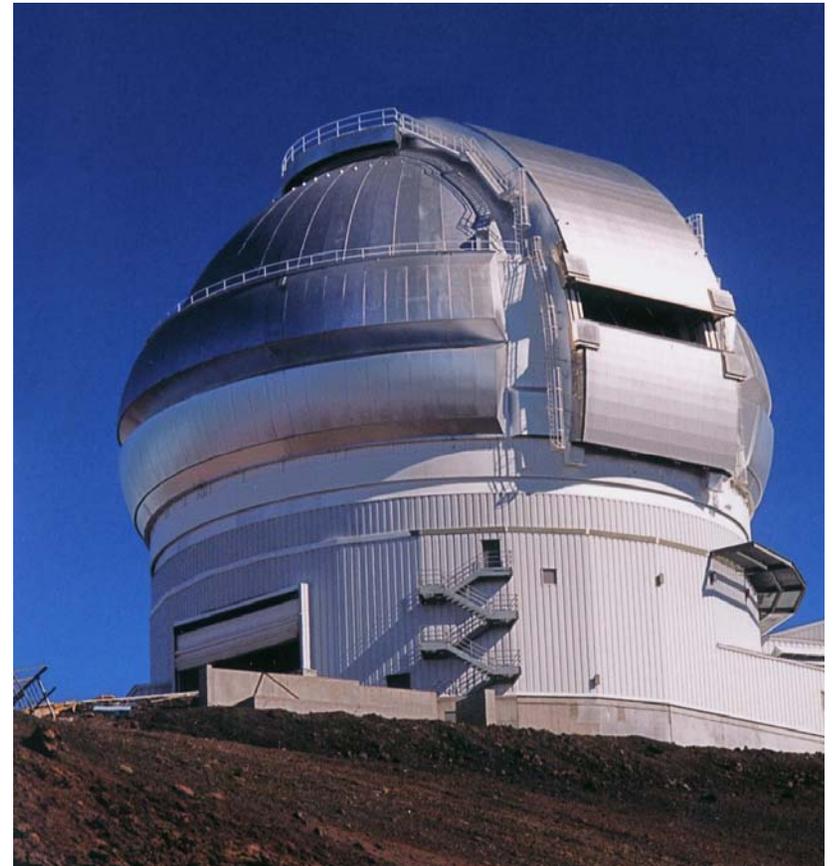
IDENTIFICATION OF HAZARDS

Identify sequential project steps

- Site Clearance
- Excavation
- etc.

Identify Hazards at each step

- Environmental Concerns
- Soil Contamination
- Etc.



IDENTIFY HAZARD CONTROLS

Engineer out Hazards

- Engineering & Design Reviews
- Constructability Reviews

Identify Hazards Not Controlled

- Define responsibility for controlling remaining hazards



PROJECT HAZARDS ANALYSIS

Schedule Activity ID #	Project Phase 1. Site Prep	Hazard	Controls	Special Notes	Responsible Party
	Demolition Removal of existing condemned building	Asbestos in building.	Asbestos abatement program to be in place.	Verify contractor's asbestos abatement program is documented and employees have been trained.	Demolition contractor

SAFETY POLICY



“No work is so important that it need be done without due consideration for safety.”

Project Manager

RESPONSIBILITY & ACCOUNTABILITY

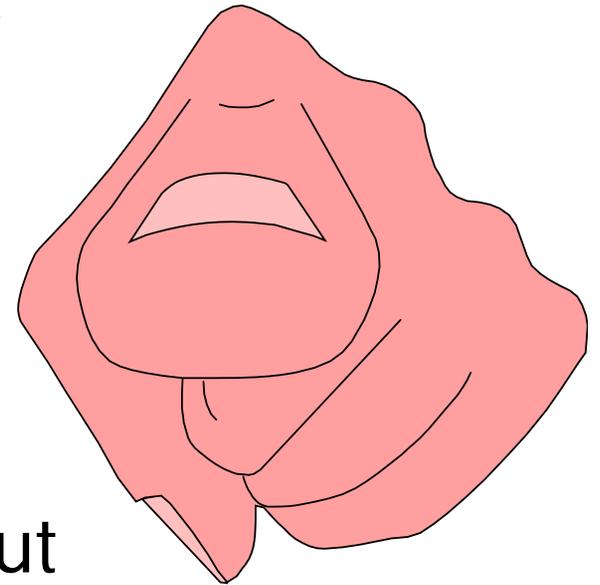
Key to achieving effective safety performance is assigning

RESPONSIBILITY

for achieving desired results

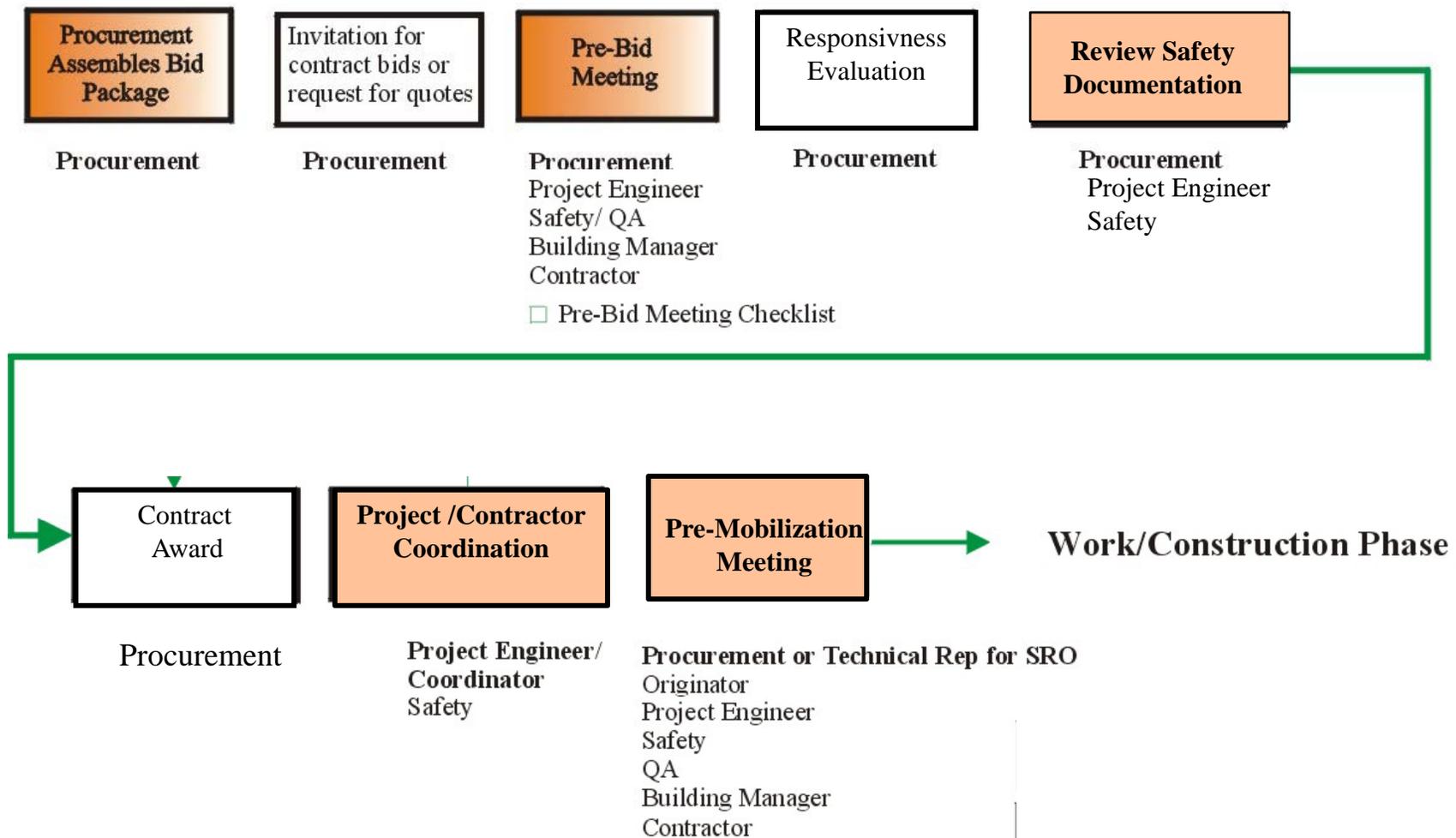
Responsibility means little without

ACCOUNTABILITY



SAFETY IN THE PROJECT EVOLUTION

Procurement/Contracting Phase



PRE-BID MEETING



Review Safety Expectations

Highlight Contract Safety Requirements

- Site Specific Safety Plan
- Designated Safety Representative Requirement
- Daily Pre-Work Coordination Meetings (JSAs)
- Enforcement
- Drug Screening (Pre-Employment & Post-Accident)

Identification of Hazards

- Identify Hazards not yet Controlled
- Define Responsibility to Control Hazards

TRADITIONAL SELECTION CRITERIA

- Low Bid
- Lower Bid
- Lowest Bidder that can start Tomorrow



CONTRACTOR SELECTION CRITERIA

- Low Bid
- EMR Rate equal/less than 1.0
- Site Specific Safety Plan
- Demonstrated Past Performance
- Key Personnel Experience



EXPERIENCE MODIFICATION RATE



1.30 - 2.05	Poor Lack of Safety Involvement
1.05 - 1.29	Inadequate Conspicuous Past Problems
0.82 - 1.04	Average Within Industry Norm
0.72 - .81	Effective Impressive Results - Obvious Commitment
0.30 - .71	Superior Distinguished Results

*Michigan Construction Users Council (MCUC)

Demand the “A” Team

Key personnel (Owner & CM/GC) PM, Super & Safety Mgr

- Previous experience on projects of similar technical scope
- Previous experience on projects of similar scale
- With DEMONSTRATED Individual success on past projects

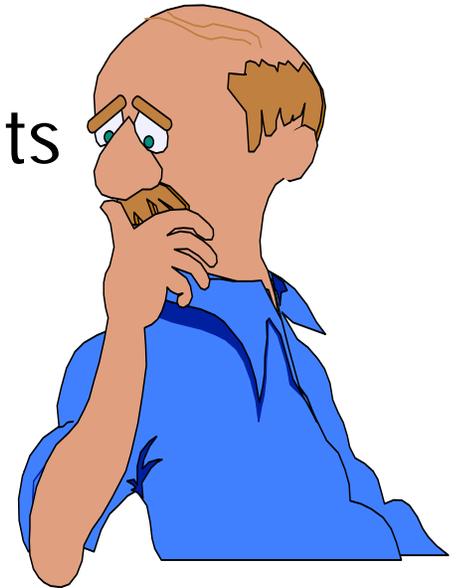
Competent Person on site whenever performing work

Heavy equipment operators must provide proof of competency on site-specific equipment

On-Site Nurse on projects over \$ 75 M

PRE-MOBILIZATION MEETING

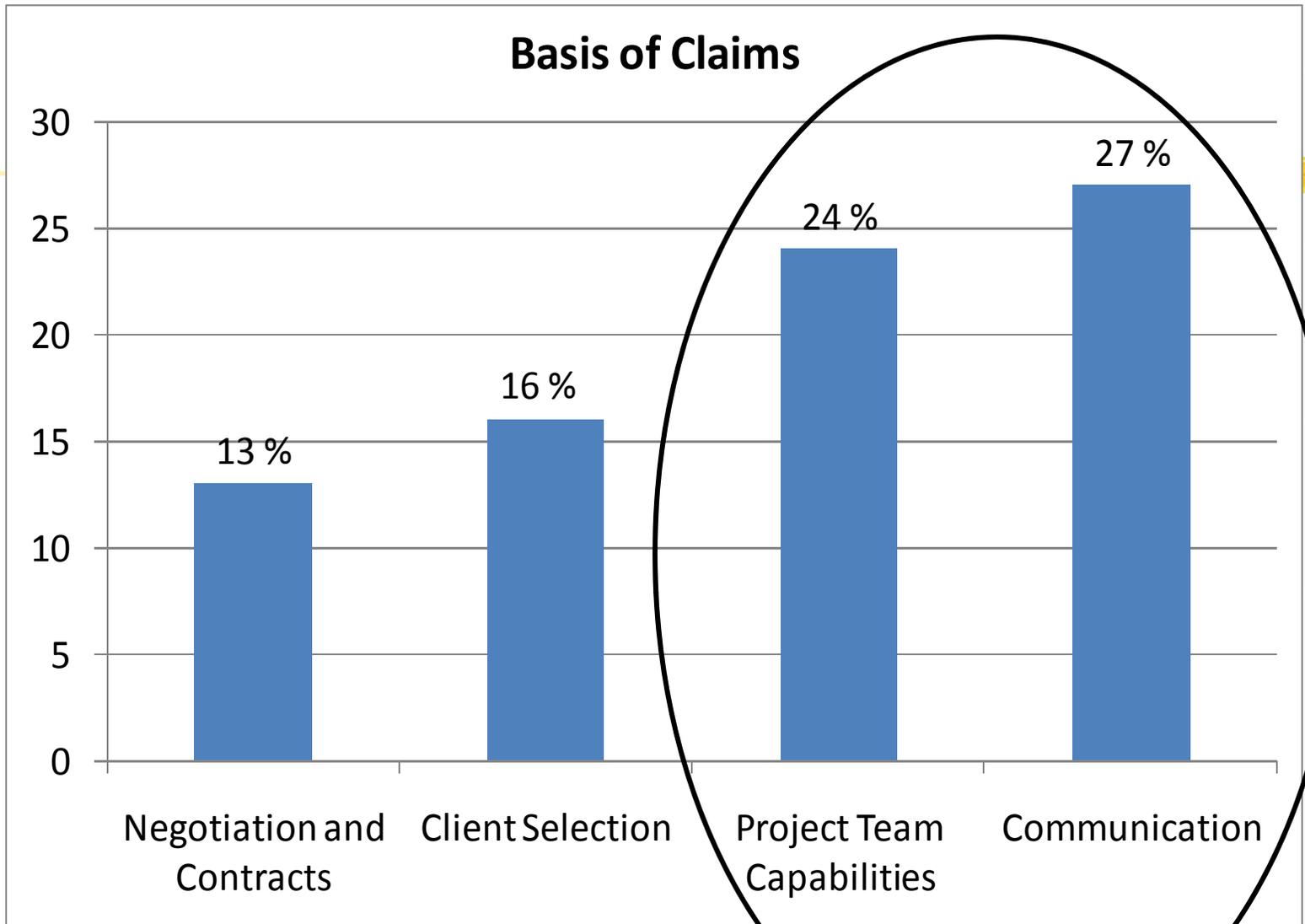
- Review Contractual Safety Requirements
- Discuss Site Specific Safety Plan
- Conduct Pre-Phase Discussion
- Confirm Assignment of Safety Responsibilities



PARTNERING & COMMITTEES



- **Partnering** – Define Roles & Responsibilities, safety, accountability and authority of Owner, GC and subcontractor personnel.
- **Safety Stewardship Committee**
 - Establish committee at the outset of the project scaled to project
 - Typical members Owner/GC PM, Field Managers, Safety Manager & craft representation
 - Projects over \$ 50M should include GC executive
 - Analysis of incidents for lessons learned
 - Communicate (Lessons Learned – Public Relations)
 - Identification of high hazard activities
 - Conflict resolution to address personality conflicts, interpretation of code, management processes, etc.



Analysis of 11,000 Claims worth \$ 1 Billion, by XL Insurance Company

No matter how many times you've done a job before, be sure to think the whole thing through before you start.



WORK PLANNING & CONTROL



Work planning is learned; it is not an instinctive process

- Conduct Pre-Phase Work Plan Reviews
- Require Daily Pre-Task Meetings
 - **Job Hazards Analysis – Prerequisite for all activities**
- Institute monthly contractor supervisor training,(in addition to regular All-Hands Meeting)
- Focus - Coach vs. Cop
 - Assistance vs. Auditor
 - Pathfinder vs. Road Block

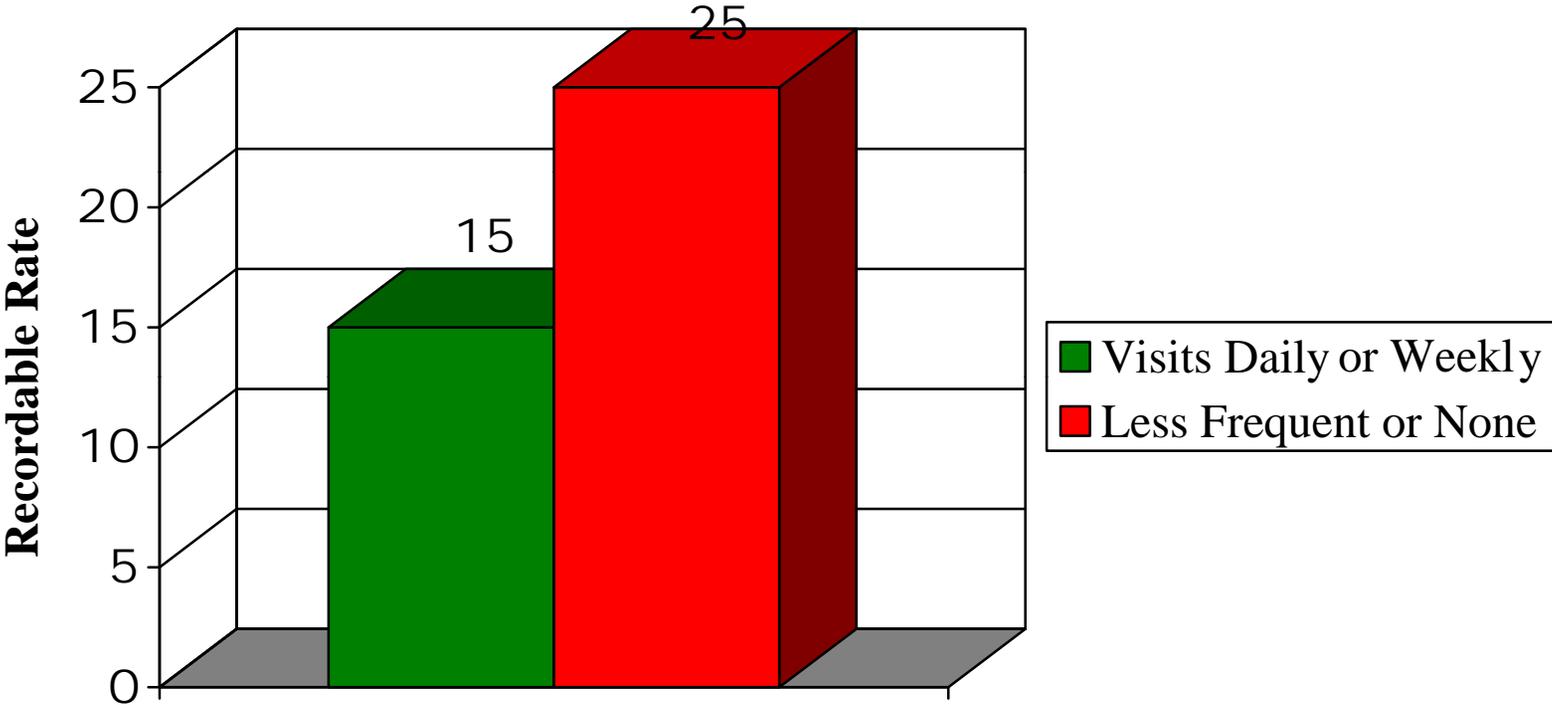
INSPECTIONS

- Identify Unsafe Work Conditions
- Observe Work Practices (Reflect JSAs ?)
- Reinforce Expectations





MANAGEMENT SITE VISITS



Source: Hinze and Pannullo 1978



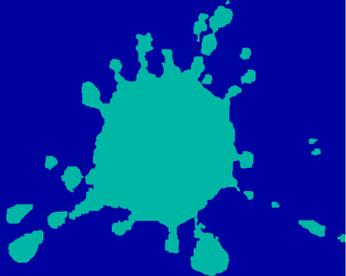
Things are the way they are because either:

Management wants them to be that way.

Management tolerates them being that way.

**Management does not know that things are the
way they are.**

Management is not aware of other approaches.



ENFORCEMENT

- Establish a progressive disciplinary action program
- Administer enforcement uniformly



RECOGNITION



Safety Stars

- Recognize safe work practices in the field in real time



Alternate Accolades

- **Written words:** Recognize individuals in project newsletters or give individuals a letter of appreciation and copy employer
- **Positive attention:** Give individuals public praise at Safety Meetings and Toolbox Talks

“Every revolutionary idea seems to evoke three stages of reaction. They may be summed up by the phrases...

(1) It’s completely impossible.

(2) It’s possible, but it’s not worth doing.

(3) I said it was a good idea all along.”

-- Arthur C. Clarke

KEY PRACTICES -SUMMARY



Establish clear rules and procedures

Work Only with partners having proven safety track records

Place significant emphasis on safety during the contract bid and award process

KEY PRACTICES - SUMMARY



Establish a clear understanding of the work process and responsibilities from concept . . . to acceptance of completed work

Assure that identified job related hazards have been controlled or are communicated to workers

(If a man takes the cover off a pit or if he digs one and does not cover it, and a bull or a donkey falls into it, he must pay for the animal. Exodus 21:33-34)

KEY PRACTICES - SUMMARY

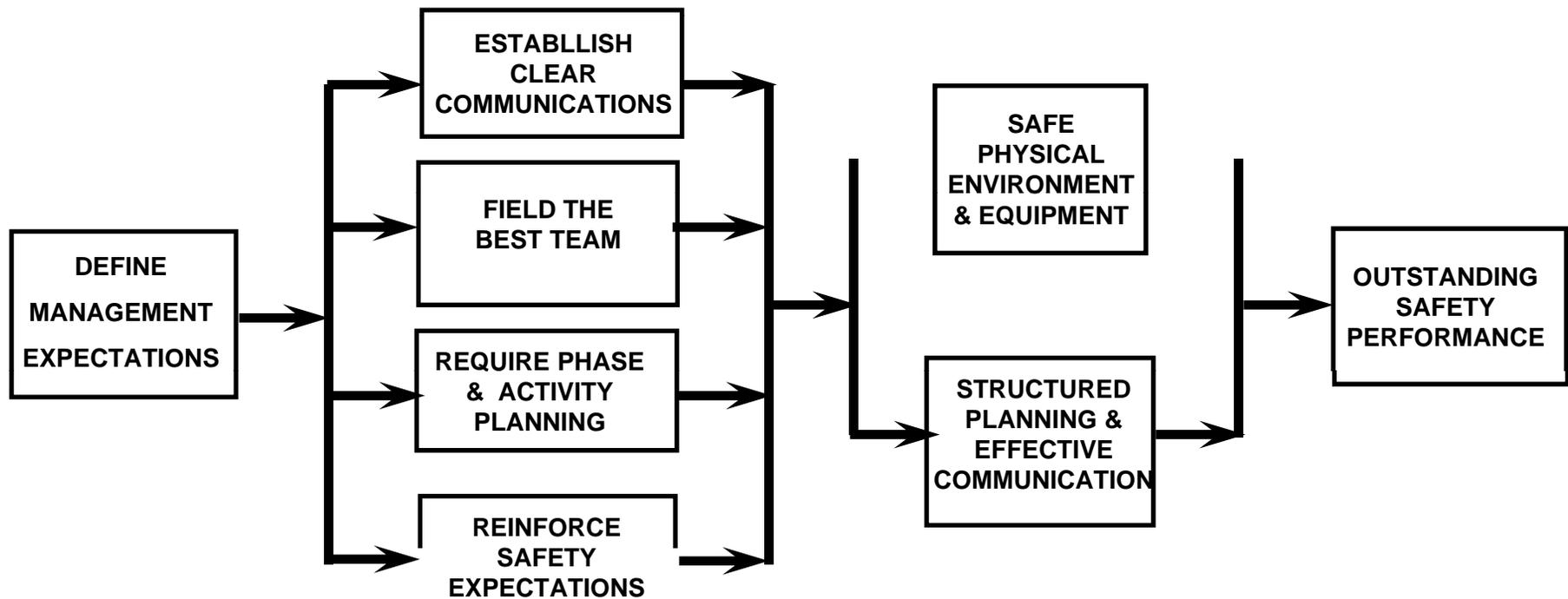


Maintain a Visible presence and conduct frequent site visits with a focus on safety

Do not compromise on enforcement of contractual safety requirements

Foster a partner vs. adversarial relationship

WORLD CLASS SAFETY PROGRAM STRUCTURE



The Essential Cornerstone



The Main Drivers



The Workplace Outcomes



The Result

THANK YOU

A horizontal brushstroke in a vibrant yellow color, with a textured, painterly appearance, extending across the width of the page below the 'THANK YOU' text.

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