Safety Culture (& ISM)

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Outline

- DNFSB ISM focus
- Safety Culture
- Top 10 … ways to know you have a safety culture!
- Challenge ahead

Recent DNFSB ISM Focus

Integrating Safety in Design

- Properly address safety-related design requirements and issues early in the design process.
- DOE Standard 1189, *Integration of Safety into the Design Process.*

Nuclear Safety Research (Rec 2004-1)

- DOE should establish, fund, and execute an integrated corporate nuclear safety research program that cuts across program lines.
- Efforts to date have not produced a viable program.
- Board continues press DOE to institute program.

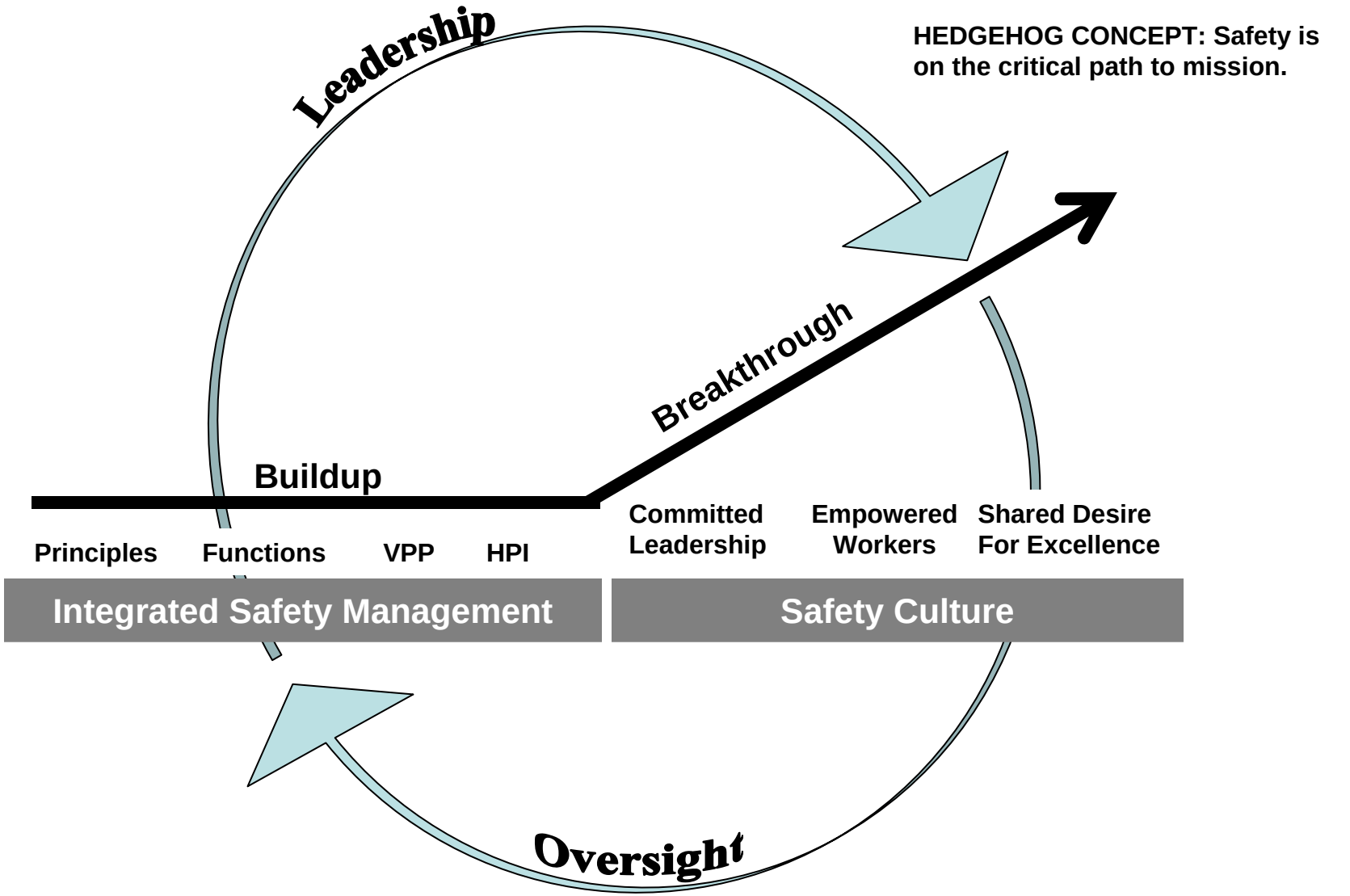

Figure adopted from: Jim Collins, Good to Great; HarperCollins Publishers, NY; 2001.

Safety Culture

Safety culture is an organization's values and behaviors – modeled by its leaders and internalized by its members – that serve to make nuclear safety an overriding priority.*

- Dating back to SEN-35-91, it's DOE Policy.
- It's perishable.

*INPO, *Principles for a Strong Nuclear Safety Culture*, November 2004.

No. 1: Leadership (the talk)

The safety message from upper management is loud and clear and they are its leading advocate.

- "Safety is a core value of DOE." (S-2)
- *But not :* "We are too risk averse"; "Getting the job done"; "Mission first"; "Managing the 'contract' and not the 'contractor' – the 'what' but not the 'how.'"

Leaders realize that production goals, if not properly communicated, can send mixed signals on the importance of nuclear safety.

No. 2: Balanced priorities

- Safety is the overriding priority.
- ISM priorities are “balanced” if weighted in favor of safety as the first priority.

  - “No job is more important that your health, your safety, and the protection of our environment.”
  - The end result of good safety practices is productivity; compromise safety … compromise mission.

  HEDGEHOG CONCEPT: Safety is on the critical path to mission.

- Cleaning up legacy waste promotes public safety; missions of national importance.
- Line managers must resolve the natural conflict between what they want to do (mission), and what they need to do (safety).

No. 3: The walk

- There is management *commitment*, *support, and resources* for safety programs.
- Senior and line managers are involved in operations and fully accountable for safety and performance of operations.
- Continuing and effective management presence on the floor means technical understanding and awareness of the work and the hazards.
- The importance of identifying, evaluating, and fixing weaknesses, failures, and accident causal factors is emphasized loudly and often.

No. 4: Empowerment

- A clear understanding by workers that line management is responsible for creating the safest work environment, but ultimately safety is the worker's responsibility.

- Ownership that empowers workers to raise safety concerns and offer continuous improvement suggestions.

- "Safety Culture" may be driven by management, but it is measured by the behaviors, attitudes, and values of workers.

No. 5: Responsibility

- Workers accept responsibility for their own personal safety and the safety of their coworkers.
- Employees help each other, and there's peer pressure to work safely.
- Workers are capable of discovering the potential hazards, risks, and problems associated with their work, and the controls to protect them, i.e., ISM.
- Respect for radioactive materials, criticality, and other hazards associated with nuclear activities.

No. 6: Trust

- Employees are encouraged, and even rewarded, to step back or stop work if safety practices are questioned.
- Workers can identify problems without fear of retaliation and with confidence the problems will be properly addressed and/or fixed in a timely manner.
- Opposing views are encouraged and considered.
- A questioning attitude is cultivated.
- There is an openness to criticism and recommendations for improvement.

No. 7: Lessons learned

- Emphasis on feedback and improvement, including a robust lessons learned program that works.
- Corrective actions get at root causes and are effective and long lasting.
- We can learn much more from our failures than from our successes.
  - In evaluating a failure, we can usually identify its source.
  - It's much more difficult to learn from success; the margin of success is difficult to quantify especially for low probability, high-consequence events.
  - *"Past performance is no [guarantee] of future returns."*
  - STAMP OUT COMPLACENCY!!!

No. 8: Checks & balances

- Internal and external oversight is a must.
- Safety organizations have clear responsibilities and authorities that are independent of the line.
- Safety organizations are not dependent on line organizations for funding and have organizational influence.
- Mutual respect (esp. at design labs) and effective communication between line managers and independent oversight.
- Any adversarial relationships that exist between line managers and assessors should be discouraged by both sides.

No. 9: Proactivity

- The organization has a good understanding of leading (and technically-relevant) indicators of potential safety concerns, as opposed to lagging indicators.
- Anomalies, near-misses, off-normal, and random events are recognized and fully investigated.
- The *status quo* is questioned.
- A strong focus on nuclear safety R&D in support of risk-informed decisions.

No. 10: Training

- Training and qualification are continuous.
- Organizational knowledge is valued and preserved.
- Managers and supervisors are personally involved in high-quality training that consistently reinforces expected worker behaviors.
- Trainers are adept at instilling nuclear safety values and beliefs that serve as the correct way to *think, act, and feel* [INPO]. The organization places a high cultural value on safety.
- Training is augmented with sufficient practical exercises to instill competence and confidence.

CLIMBING THE STEPS TO AN EFFECTIVE SAFETY CULTURE

SHARED DESIRE FOR EXCELLENCE

EMPOWERED WORKERS

COMMITTED LEADERSHIP

BALANCED PRIORITIES & RESOURCES

TOOLS: VPP, QA, TRAINING, HPI, STANDARDS

FOUNDATION: INTEGRATED SAFETY MANAGEMENT

CHECKS & BALANCES

Final Thoughts & Challenge Ahead

- **Can ISM be used to change the safety culture of an organization? Yes!**
- **Has ISM had a fundamental impact on DOE's safety culture? Yes!**
- **The Challenge Ahead**
  - We can engineer systems and processes to facilitate a more effective safety culture.
  - But we cannot engineer the committed leadership, the empowered workers, or the shared desire for excellence that will take us the rest of the way to the top – **to a well-established safety culture!**

That is our next great challenge!