A Gamechanger for Measuring OSH Performance: ANSI/ASSP Z16.1-2022

Pam Walaski, CSP, FASSP
Senior Program Director
Specialty Technical Consultants, Inc.
pwalaski@stcenv.com
www.specialtytechnicalconsultants.com

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

This session is eligible for 1.25 Continuing Education Hours.

For these hours to appear on your certificate, you must:

- Have your badge scanned at the door
- Attend 90% of this presentation
- Fill out the online evaluation for this session

Online Evaluation

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

What's Wrong with How We Do it Now?

- Lagging incident rates don't measure how well your "safety" program is functioning*
- OSHA Recordkeeping Standard intended to track information and enforcement, not measure progress
- No consistent use/definition of terms – metric, indicator, lagging, leading, etc.
- Metrics isolated from business operations – doesn't provide information on value of investment

*The Statistical Invalidity of TRIR/Hallowell et al/PSJ 4-2021

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Key Issues Addressed

- Credibility of a consensus Standard process
  - Representation from SMEs and key stakeholders
- Clear definitions and iterative process
  - Lagging, Leading and Impact Metrics
- Addresses impact of OSH programs/processes
  - Demonstrates value to business
- Importance of balanced approach
  - Combines risk reduction with OSH management system improvement

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Conformance

Not a certification standard

- "Shall" – must
- "Should" – effective practices and recommendations

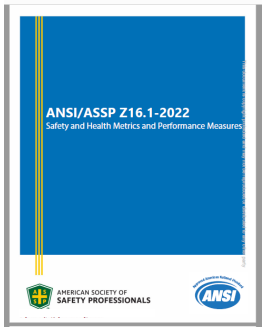
Conformance requires using balanced approach

- At least one risk management and one OSH management system opportunity
- Balanced set – pairing leading with lagging and using impact, where appropriate

A Little History

- Original Committee developed 5 standards – withdrawn after OSHA and BLS took over recordkeeping activity (1970's)
- Current Z16 Committee
  - Reestablished in 2017
  - Intent to revise the withdrawn version
  - Ended up with complete rewrite

Table of Contents



Purpose of OSH Metrics

- Measure impact on capacity and resilience
- Identify incident sources or problem areas
- Promote improvements that reduce risk profile
- Assess management system effectiveness
- Provide organizational feedback
- Track incident cost reduction

Purpose of OSH Metrics

- Measure impact on capacity and resilience
- Identify incident sources or problem areas
- Promote improvements that reduce risk profile
- Assess management system effectiveness
- Provide organizational feedback
- Track incident cost reduction

- What metrics are you tracking now?
- Do they address the purpose?

Standardized Definitions

Metric – a quantifiable measure that is used to track and assess the status of a specific process

Why metric?

Includes measures and single-focus indicators

Multi-dimensional

Standardized Definitions

Lagging

- Consequences of actions taken/not taken
- Based on results at end of time period

Leading

- Capable of influencing/predicting results
- Aimed to prevent/control future events

Individual leading or lagging on their own are not adequate

Impact Metric

- Reflect “organizational impact of safety and health-related program, policies, and activities”
- Financial, productivity, quality, employee morale, etc.
- Effect of business investment decisions on OSH – not a stand-alone process

Standardized Definitions

Balanced Approach

- Systematic and replicable approach
- Interrelationships between risk reduction and continual improvement of OSH management system

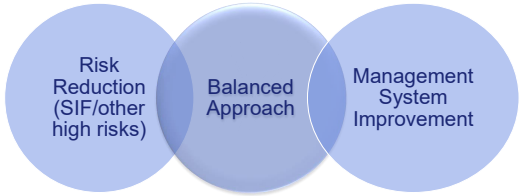
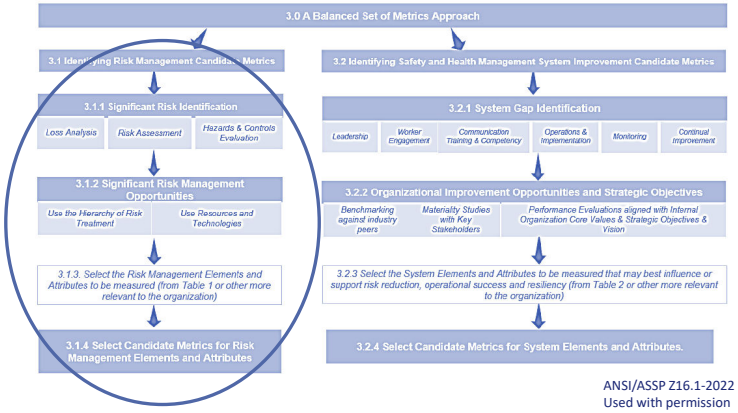


Figure 3
A Balanced Set of Metrics Approach



ANSI/ASSP Z16.1-2022
Used with permission

Developing Risk Management Metrics

Identify candidates for risk reduction

High severity/likelihood, greatest loss potential	Loss analyses, incident reports, audits, loss runs	Hazard/controls evaluations – non-conformities, low level controls used

Prioritize for greatest improvement potential

Resources and technologies, funding, people	Hierarchy of Risk Treatment

- Treatments – more than typical control hierarchy (engineering, administrative, PPE)
- Controls - subset of treatments

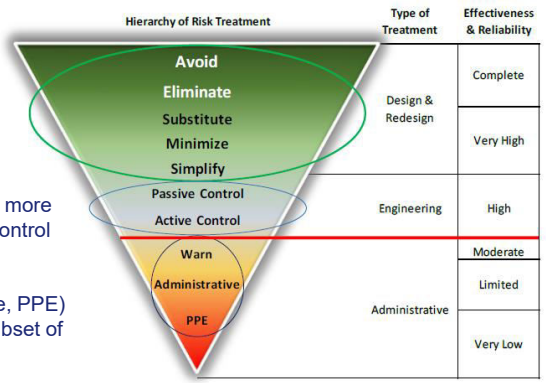


Figure 7. Hierarchy of Risk Treatment Model (Lyon, Walline, Popov, 2019)

ASSP TR 31010-2020: Risk Management Techniques for Safety Practitioners

Risk Management Metrics

What are your organization's top three risks?

Developing Risk Management Metrics

Select elements/attributes to be measured

- Elements of risk management
- Attributes – key characteristic of the element
- Table 1 or your own
- Examples
  - ✓ Risk identification – identify hazards, including all aspects
  - ✓ Risk treatment – design/redesign the workplace

Table 1
Common Risk Management Elements and Attributes

Elements	Attributes Improve the process to:
Risk Consultation	Encourage greater stakeholder involvement
	Encourage greater worker participation
Risk Identification	Identify hazards and evaluate the level of treatments and/or controls
	Better match treatment and control options to risk causation
Risk Assessment and Evaluation	Use higher levels of the hierarchy of risk treatment and/or controls to manage risk
	Apply ALARP principles (as low as reasonably practicable)
	Lower the level of acceptable risk
Risk Treatment	Assess risk and prioritize abatement in a timely manner
	Design and/or re-design the workplace
Risk Monitoring	Continually assess and improve conformance to treatments and controls
	Have management continually assess and improve the effectiveness of treatments and controls

ANSI/ASSP Z16.1-2022
Used with permission

Developing Risk Management Metrics

- Select leading, lagging and impact metrics
  - First ask - What do we want to achieve? (lagging)
  - Then ask - How can we influence the result? (leading)
  - Last consider - What impact on organizational strategy will occur? (impact)

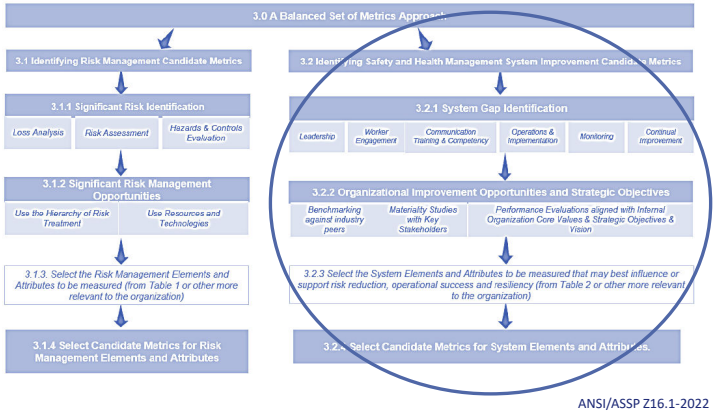
Take a few minutes to jot down some examples based on one of your top three risks – they <u>cannot</u> be injury/incident based

- Select leading, lagging and impact metrics
  - First ask - What do we want to achieve? (lagging)
  - Then ask - How can we influence the result? (leading)
  - Last consider - What impact on organizational strategy will occur? (impact)

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Figure 3
A Balanced Set of Metrics Approach



ANSI/ASSP Z16.1-2022
Used with permission

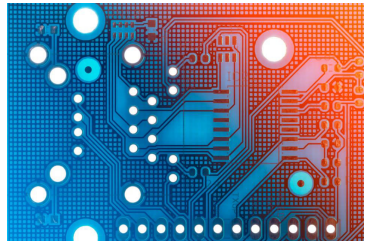
Developing Management System Metrics

- Gap Analysis of OSH management system elements
  - Look for alignment with risk metrics – they should compliment each other
- Compare gaps to organization's strategic objectives or benchmarking against industry
- Everyone has a management system

Developing Management System Metrics

Select elements and attributes to be measured

- Elements of MS - Leadership, support, monitoring, continual improvement
- Table 2 or your own
- Examples
  - ✓ Leadership – Top Management's commitment matched with allocation of resources
  - ✓ Support - Processes in place to improve competency of workers



NSPC NECA SAFETY PROFESSIONALS CONFERENCE

NSPC
NECA SAFETY PROFESSIONALS CONFERENCE

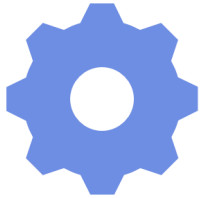
Table 2
Common Safety and Health Management System Elements and Attributes

Element	Attributes
Leadership	Top management has established safety and health and risk management as core values in the organization
	Top management has established a vision for safety and health performance and define safety and health objectives to reduce risk
	Top management's commitment to risk management and treatment is clearly demonstrated by actions and allocation of financial resources
	Top management holds people accountable for worker safety and health at all levels of the organization
Worker Engagement	Workers are engaged by having an active, meaningful role in reducing risk
	Workers have meaningful roles in safety and health decisions, including risk identification, assessment, and control
	Workers are empowered to address risk
	Barriers to worker engagement are minimized
Implementation, Operation, and Support	A maintenance process is in place to prevent operation of unsafe equipment
	An emergency preparedness process is in place for all likely scenarios with drill schedules
	A management of change process includes safety and health review to reduce risk
	A procurement process continually looks for less hazardous substitutes
	A process is in place to ensure that personnel operate safely and follow site rules
	An occupational health process provides for early detection, treatment and return to work
System Support • Communication • Training • Competency	Safety and health messages are effectively communicated to stakeholders
	A process is in place to ensure management and workers understand the risks, and how and why to work safely
	The organization has a system in place that promotes continual safety competency improvement

ANSI/ASSP Z16.1-2022
Used with permission

Developing Management System Metrics

- Select leading, lagging and impact metrics
  - First ask - What do we want to achieve? (lagging)
  - Then ask - How can we influence the result? (leading)
  - Last ask - What impact on organizational strategy will occur? (impact)



NSPC
NECA SAFETY PROFESSIONALS CONFERENCE

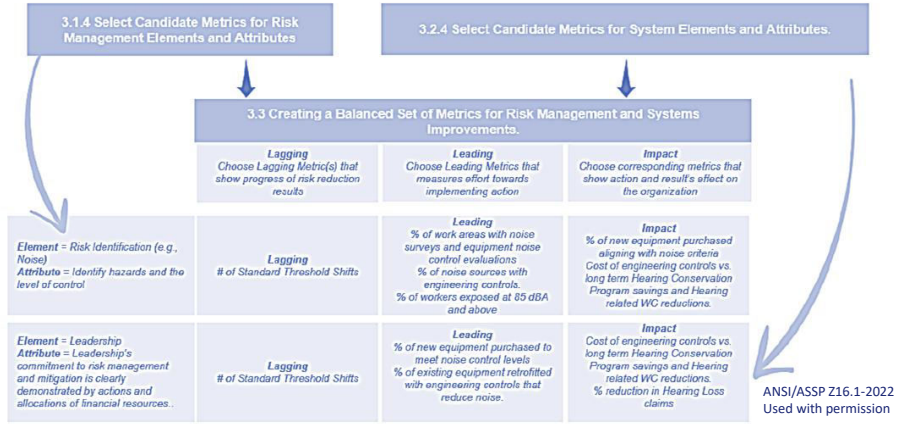
Developing Management System Metrics

- Select leading, lagging and impact metrics
  - First ask - What do we want to achieve? (lagging)
  - Then ask - How can we influence the result? (leading)
  - Last ask - What impact on organizational strategy will occur? (impact)

Take a few minutes to jot down some examples based on your organization's management system

NSPC
NECA SAFETY PROFESSIONALS CONFERENCE

Figure 4 - Balanced Set of Metrics Example Flow Chart



ANSI/ASSP Z16.1-2022
Used with permission

Another Example

Significant Risk identification

- Falls from ladders - completed risk assessments/WC loss runs
  - Ladders are old and not in good condition
  - Lots of work at heights tasks
  - Serious injuries; no fatalities but risk assessments indicate high probability

Significant Risk Reduction Opportunity

- Redesign work tasks – less work at heights
- Minimize use of portable ladders – mobile platforms, lifts

Note: Not better training and inspections!

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Another Example

Select Metrics

- Lagging
  - Number of work tasks by department requiring portable ladders down by 50%
  - Inventory of portable ladders down by 50% - old ones not replaced, no new ones purchased
  - Inventory of mobile platforms/lifts up by 50%
- Leading
  - Number of work at height tasks with revised risk assessments goes up by 30
  - Number of assessments recommending higher level controls goes up by 20

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Another Example

Management System Improvement

- System Gaps
  - Leadership doesn't allocate enough resources for revising risk assessments
  - Workers are not engaged in task design/risk assessments

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Another Example

Select Metrics

- Lagging
  - Resource allocation for equipment purchases – mobile ladders, lifts increases by $25,000.
  - Number of risk assessment teams increases from 1 to 4.
  - Percent of work at height risk assessment revised increases by 50%
- Leading
  - Change in equipment authorization process - OSH managers can approve purchases up to $2,500 from $500
  - OSH department budget increases by $10,000 to train new risk assessment teams

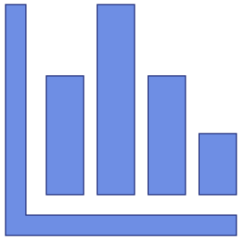
NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Another Example

Select Metrics

- Impact – Risk Reduction
  - 20% decrease in WC premium
  - 25% decrease in work at height tasks
- Impact – Management System Improvement
  - Leadership identifies two other resource allocation barriers and corrects them
  - Worker engagement survey results improve by 20%

NSPC NECA SAFETY PROFESSIONALS CONFERENCE



Metric Requirements

- Normalized
  - Rates, trends, percentages
- Accurate and verifiable data
  - Not subjective, easily understood
- Collection and calculation methods documented
- SMART

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Smart Metrics

S = Specific

M = Measurable

A = Available

R = Relevant

T = Timely

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Collaboration

- Addressed in greater detail in the Appendix
- Input will energize stakeholders and increase their commitment

NSPC NECA SAFETY PROFESSIONALS CONFERENCE

Communication

- Ensure all levels understand what metrics leadership views as important - organization's strategic plan
- Clearly demonstrate value of OSH to the organization
- Includes internal and external stakeholders
- Tailored to the audience and uses multiple methods – dashboards, emails, press releases, meetings, trainings
- Organization determines methods and timetable

NECA SAFETY PROFESSIONALS CONFERENCE

Evaluating

Metrics must be*:

- Accurate, comparable, reproducible, meaningful and relevant
- Driving actions needed to achieve objectives
- Clearly understood and able to be acted upon by intended audience
- Not driving any unintended or unanticipated consequences

*Section 6.1

Evaluating

- Regularly review program effectiveness
- Input from cross functional groups of stakeholders
- Used to identify gaps and efficiencies and correct them
- Results used for continual improvement
- Investigate results that are outliers

NECA SAFETY PROFESSIONALS CONFERENCE

Appendix A

- Explores each of the section/subsections in greater detail
- Three extensive tables
  - A-1 - Sample Risk Management Metrics (3 pages)
  - A-2 – Sample Safety and Health Management System Metrics (4 pages)
  - A-3 – Balanced Set of Metrics Examples (3 pages)

NECA SAFETY PROFESSIONALS CONFERENCE

Appendices B-D

- B = Lagging Metrics
- C = Leading Metrics
- D = Impact Metrics
- Multiple examples of each

NECA SAFETY PROFESSIONALS CONFERENCE

Now What?

1. Deep dive into the Standard
2. Gather a transition team – all levels represented
3. Plan for transition - consider a “bait and switch” approach
4. Develop consensus on top three risks and conduct management system gap analysis
5. Baby steps/pilot programs - ask “what are we trying to improve?” “what new program are we ready to implement?”

NECA SAFETY PROFESSIONALS CONFERENCE

Ready to get started?

Pam Walaski, CSP, FASSP
Senior Program Director
Specialty Technical Consultants, Inc.
pwalaski@stcenv.com
www.specialtytechnicalconsultants.com

NECA SAFETY PROFESSIONALS CONFERENCE

Please complete the Online Evaluation

NECA SAFETY PROFESSIONALS CONFERENCE