Overview of NIST Safety

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NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

Overview of NIST Safety

- Historical Perspective
- Roles and Responsibilities
- Safety Management System
- Performance Metrics
- Recent Events
- Safety Culture at NIST
- Risks, Opportunities, Action Plan

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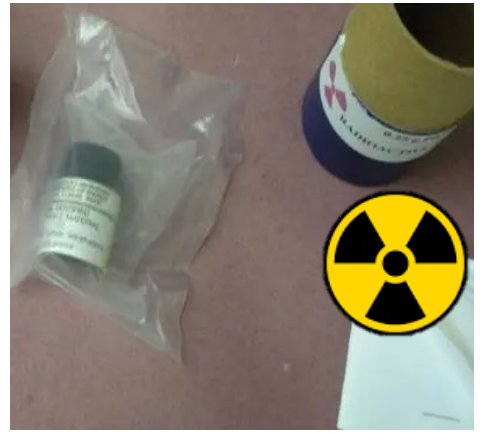
OSH: Occupational Safety and Health
SMS: Safety Management System
OSHE: Office of Safety, Health and Environment
OU: Organizational Unit (Offices/MR and Labs/LP)

2008 Event That Initiated the Shift to NIST's Current SMS

In 2008, a researcher at NIST Boulder broke a vial containing a salt of plutonium, a highly toxic radioactive material. The researcher did not report this event to a supervisor or to the Radiation Safety Officer in a timely manner. As a result, contamination was not restricted to the multi-use lab in which the work occurred.



Contributing causes listed in the Nuclear Regulatory Commission (NRC) incident report

- Staff were not adequately trained
- Lack of procedures and inadequate hazard analysis
- Managers had not approved work and did not provide adequate oversight
- Emergency response to the event was inadequate

Root Cause(s): "*Less than adequate management oversight and accountability*" NRC

"Neither NIST management nor staff fully understood safety performance expectations and did not recognize their responsibility or accountability for ensuring implementation."

Changes in Safety at NIST Post 2008 - Today

NIST transitioned from an Administrative Manual to a Directives Management System

- Policies convey organizational commitment
  - Orders communicate requirements, roles and responsibilities
    - Suborders, unique to safety, contain technical safety and regulatory requirements for specific areas

NIST safety management system adopted, based initially on OHSAS 18001, now on ISO 45001

Safety elevated from Division to OU, Office of Safety Health & Environment, within Management Resources

- Chief Safety Officer is an Executive position
- Staffing levels and expertise are generally adequate to meet baseline needs of the NIST mission
- Safety staff located in main lab buildings to improve visibility, accessibility and service delivery
- Safety requirements are developed collaboratively with input from NIST staff, approved by Chief Safety Officer with concurrence NIST executive safety committee; safety inspections are conducted collaboratively with OSHE staff

Safety culture improvement was embraced after the incident; surveys conducted 2011, 2014, 2017…

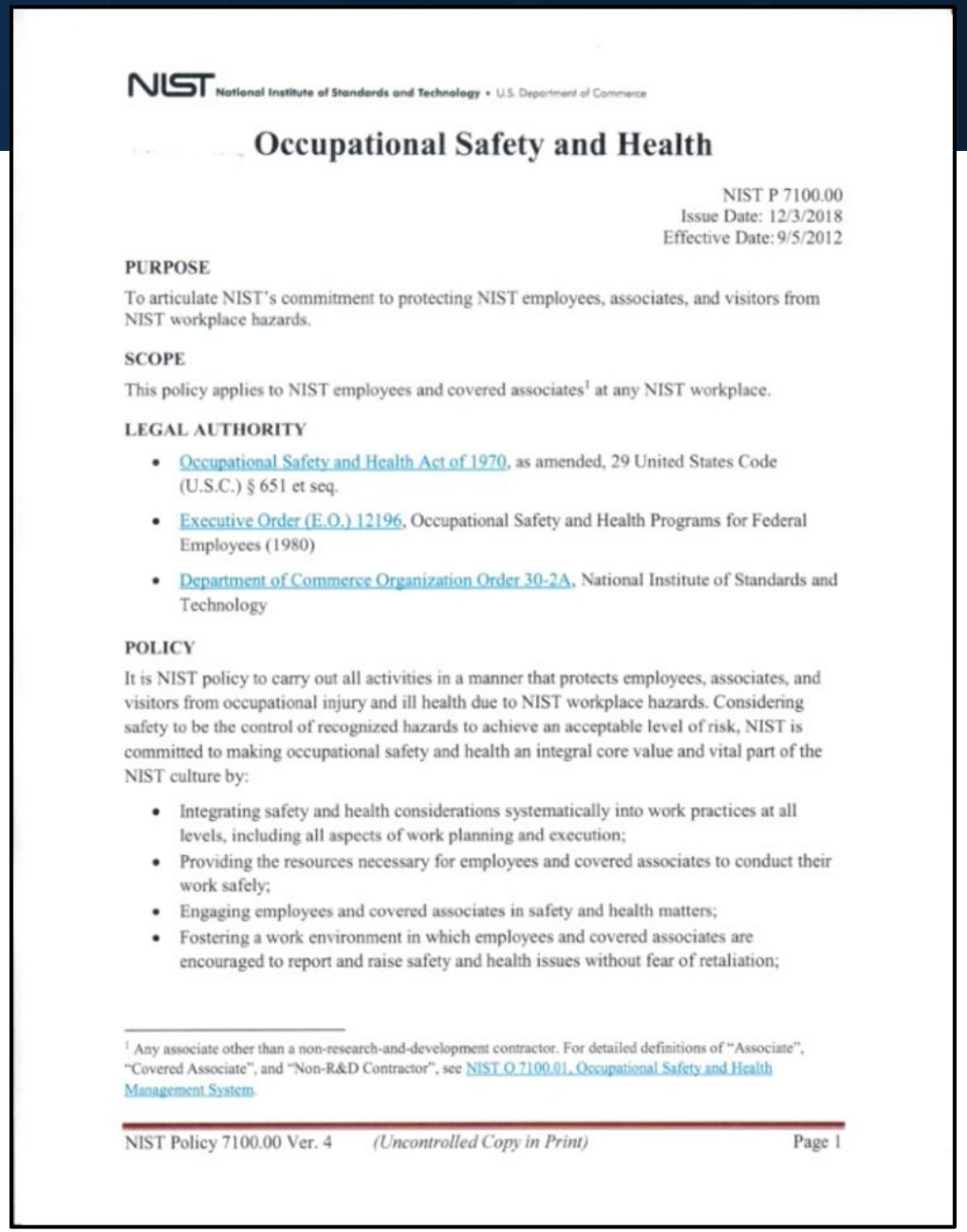
Occupational Safety and Health Policy

Policies are signed by the NIST Director

Basic OSH Policy commitments:

- Systematically integrate safety and health into work practices
- Provide adequate resources to support safe conduct of work
- Engage employees
- Foster environment for reporting safety concerns without fear of retribution
- Continual improvement
- Regulatory compliance
- Communicating safety objectives

NIST OSH Policy sets the expectation for all staff, employees and associates, to take personal responsibility for the safety of themselves and others, and for making safety an integral core value and vital part of the NIST culture.



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Occupational Safety and Health

NIST P 7100.00
Issue Date: 12/3/2018
Effective Date: 9/5/2012

PURPOSE

To articulate NIST's commitment to protecting NIST employees, associates, and visitors from NIST workplace hazards.

SCOPE

This policy applies to NIST employees and covered associates[1] at any NIST workplace.

LEGAL AUTHORITY

- Occupational Safety and Health Act of 1970, as amended, 29 United States Code (U.S.C.) § 651 et seq.
- Executive Order (E.O.) 12196, Occupational Safety and Health Programs for Federal Employees (1980)
- Department of Commerce Organization Order 30-2A, National Institute of Standards and Technology

POLICY

It is NIST policy to carry out all activities in a manner that protects employees, associates, and visitors from occupational injury and ill health due to NIST workplace hazards. Considering safety to be the control of recognized hazards to achieve an acceptable level of risk, NIST is committed to making occupational safety and health an integral core value and vital part of the NIST culture by:

- Integrating safety and health considerations systematically into work practices at all levels, including all aspects of work planning and execution;
- Providing the resources necessary for employees and covered associates to conduct their work safely;
- Engaging employees and covered associates in safety and health matters;
- Fostering a work environment in which employees and covered associates are encouraged to report and raise safety and health issues without fear of retaliation;

[1] Any associate other than a non-research-and-development contractor. For detailed definitions of "Associate", "Covered Associate", and "Non-R&D Contractor", see NIST O 7100.01, Occupational Safety and Health Management System.

OSH Order Roles and Responsibilities: NIST Director and Associates

NIST Director:

- Set policy
- Take responsibility for safety at NIST
- Ensure development of SMS
- Demonstrate commitment, including adequate resource allocation
- Define roles, responsibilities, authorities necessary for SMS implementation
- Ensure accountabilities to support OSH and regulatory compliance
- Review SMS to ensure suitability, adequacy and effectiveness and direct changes as necessary
- Approve Executive Safety Committee Charter

Associate Directors:

- Assist the NIST Director
- Review SMS to ensure suitability, adequacy and effectiveness, opportunities for improvement
- Ensure SMS implementation in their directorate
- Implement accountability in support of OSH
- Review the Executive Safety Committee Charter

Possible Gap: How is accountability implemented?

OSH Order Roles and Responsibilities: Specific Safety Roles

Chief Safety Officer

- Assist the NIST Director in defining and maintaining a SMS in accordance with ISO 45001
- Establish, implement, and maintain safety programs to ensure regulatory compliance
- Establish implement and maintain programs or processes for hazard risk assessment, training, communication, incident investigation, corrective actions, document control, performance measurements and assessments, and management reviews
- Appoint safety program managers and Authority Having Jurisdiction (fire and life safety code interpretation and enforcement)

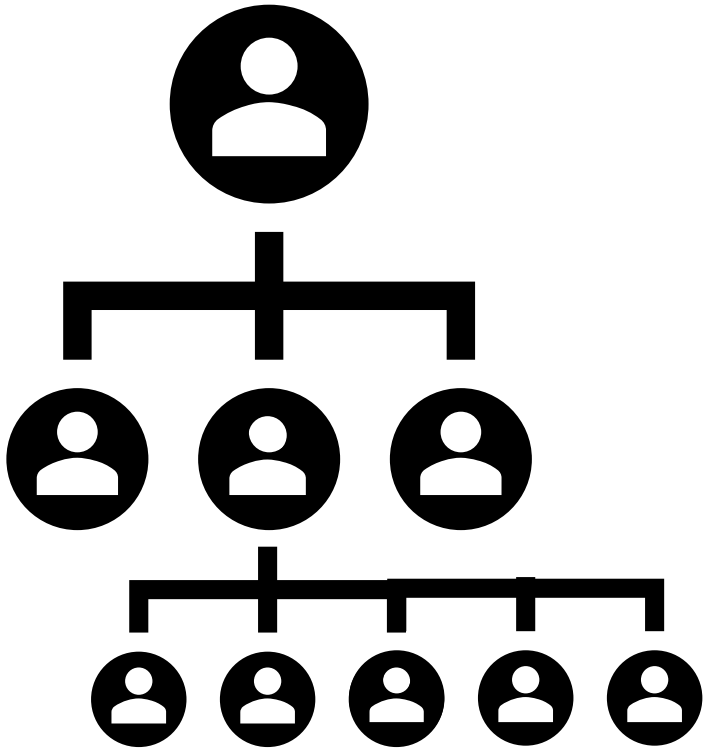
Executive Safety Committee

- ❖ Lab and Office Directors
- ❖ Chaired by Chief Safety Officer
- Participate in SMS development
- Participate in management reviews of safety performance
- Establish, update safety objectives, make recommendations for changes and improvements

OSH Order Roles and Responsibilities : OU Directors, Managers, Supervisors

<u>Office and Laboratory Directors, Managers (Division Chiefs) and Supervisors (Group/Team Leaders)</u>

- Demonstrate commitment, including resource allocation
- Participate in management observations, “safety by walking around”
- Ensure employee participation
    - Division Chiefs and Supervisors: Ensure employees are involved in hazard reviews, risk assessments
- Implement the SMS in their Organizational Units/Divisions/groups
    - Division Chiefs and Supervisors: Take responsibility areas of safety under their control and for adherence to requirements, e.g. approve work, authorize workers, assign training

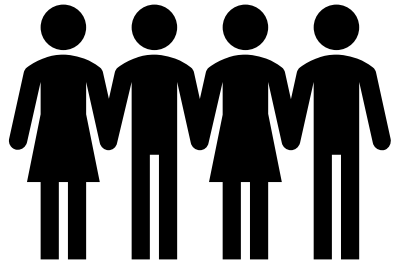


Possible Gaps: Do line managers know their responsibilities? How do they fulfill them?

NIST Staff – Employees and Associates

"***NIST Employees and Covered Associates***

- *Take personal responsibility for their own safety and the safety of others, and for making safety an integral core value and vital part of the NIST culture in accordance with NIST P 7100.00*
- *Comply with all applicable requirements of the SMS and any additional applicable requirements established by their OUs or other OUs*
- *Participate as appropriate in the development, deployment, implementation, maintenance, and continual improvement of the SMS*"



Possible Gaps: Do staff members know their responsibilities? How do they fulfill them?

Structure of NIST SMS

ISO 45001

- Fundamental Safety Programs (n=4)
- Administrative Safety Programs (n=11)
- Occupational Safety and Health Programs (n=26)
- Fire and Life Safety Programs (n=4)

ISO 14001

- Environmental Regulatory Compliance (n=14)

NRC Regulations and License Commitments

- Radiation Safety Program* (n=4)

*Radiation safety for operation of the NCNR TR-5 reactor is managed within the Center for Neutron Research and not covered by the NIST radiation safety program.

Radiation Safety Program: Basic Facts

NIST Radiation Safety Policy: Commits to ALARA and regulatory compliance

Radiation Safety Program Scope*: Radioactive materials and x-ray devices used in measurements services and research that support nuclear power, nuclear medicine, detection technologies, homeland security, and fundamental nuclear properties research

NIST Radiation Safety Officer: Manages the radiation safety program for the SNM-362 broad scope materials license and associated distribution license, and a limited-scope license for materials used at NIST Boulder

Staffing: Boulder (n=1); Gaithersburg (n=15)

Ionizing Radiation Safety Committee (IRSC): Oversees the program, approving users and uses of licensed material. Chair and membership, approved by the NIST Director; includes an executive representative and technical staff and managers with expertise in use of materials, representing the scope of licensed activities

Additional Oversight: Audits internal and external as well as NRC inspections

Accountability: Radiation Safety Officer reports to the Chief Safety Officer. The Chair of the IRSC provides an annual report on the Radiation Safety Program to the NIST Director, Associate Directors and OU Directors

**Radiation safety for operation of the NCNR TR-5 reactor is managed within the Center for Neutron Research and not covered by the NIST radiation safety program.*

Collaborative SMS Development and Maintenance Process

New or Revised Safety Programs. Developed/revised by OSHE Program Managers in collaboration with NIST staff stakeholders, typically subject matter experts at NIST.

Review. Programs are reviewed by:

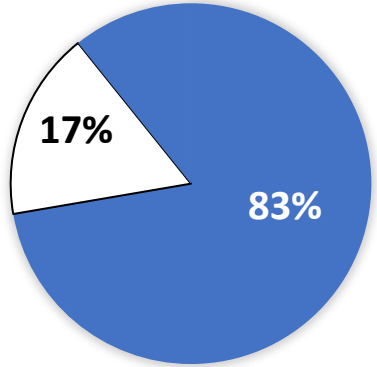
- OSHE Headquarters to ensure quality and consistency
- Safety Advisory Committee to ensure clarity and utility

Approval. Chief Safety Officer approves safety programs with concurrence of the Executive Safety Committee.

Deployment Tools. Training, checklists, and other tools needed to implement program requirements are reviewed by the Safety Advisory Committee.

Issue. Final new or revised safety programs are issued with effective dates.

- Program Manager provides an in-person briefing on program requirements
- Communication issued to inform staff of the new program



Known Gap: SMS is incomplete

NIST began this process in 2010, issuing ~5 programs per year. 54 programs issued, 11 remain.

Fundamental Safety Programs, n=4

Purpose– Establish basic rights and responsibilities for NIST staff

- **OSHA required worker rights**
- **Reporting without fear of reprisal, allows anonymous reports to Chief Safety Officer**
- **Expectation to stop unsafe work**
- **Prohibited work for minors**

Safety Rights and Responsibilities
Employee Reporting of Unsafe or Unhealthful Working Conditions (UWC)
Stop Work Program
Safety & Health Requirements for Minors

Possible Gap: Better means for anonymous reports to the CSO.

Administrative Safety Programs, n=11

Programs that are applicable NIST-wide

At a minimum, all staff are expected to implement the following programs:

- Hazard Review. Identify hazards, specify mitigation, assess risk for work they conduct
- Safety Education and Training. Train on basic safety requirements, hazard recognition and mitigation for their work and work spaces
- Incident Reporting and Investigation. Report incidents and near misses, participate in investigations when applicable
- Workplace Inspection. Participate in maintaining safety of their workspaces by resolving deficiencies

Management Observation Process
Safety Culture Program*
Monitoring, Measurement, and Assessment*
Document and Record Control
- Safety Directive Creation, Deployment, Revision
Hazard Review
Safety Education and Training
Incident Reporting and Investigation
Workplace Inspection
Corrective and Preventive Actions*
Non-R&D Contractor Safety*
Management of Change*

*Planned for deployment in FY23/24

Technical Safety Programs, n=26

Technical Safety Programs provide OSHA regulatory and other requirements (e.g., BMBL, ANSI standards, NFPA/NEC) for specific work conducted in offices, laboratories, shops and other facilities.

Biosafety	Lock-Out Tag Out
Bloodborne Pathogens	Magnetic Field
Chemical Hazard Communication	Machine and Equipment Safety
Chemical Management	Material Handling
Compressed Gas	Office Safety/Ergo resources
Cryogen Safety	Out of Service
Dispersible Engineered Nanoparticles	Overhead Cranes and Hoists
Electrical Safety (Notice posted)*	Permit-required Confined Spaces
Fall Protection	Personal Protective Equipment
Hazard Signage	Powered Industrial Trucks
Hearing Protection	Radiofrequency and Microwave
Ladder Safety (Draft posted)*	Respiratory Protection
Laser Safety	Walking Working Surfaces (Draft posted)*

*Planned for deployment in FY23/24

BMBL: Biosafety in Microbiology and Biomedical Laboratories; ANSI: American National Standards Institute; NFPA/NEC: National Fire Protection Association/National Electrical Code

Communications: Education, Incident Prevention, Wellness

- ❖ Safety Requirements
  - New safety programs
  - Updates to safety programs
  - Safety requirement reminders
- ❖ Incident Prevention
  - Hazards and mitigation strategies
  - Lessons learned from incidents at NIST, elsewhere
  - New hazards, e.g., product recalls
  - Campus and home safety, e.g., distracted driving, winter weather tips
- ❖ Health and Wellness information
  - Flu and COVID shots (Gaithersburg only)
  - COVID prevention measures

Media:

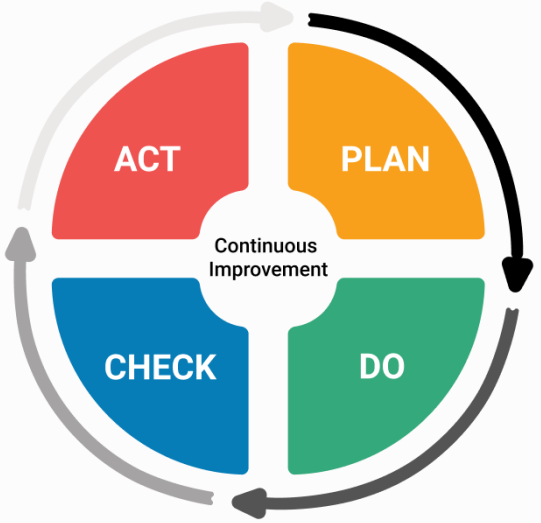
- Website
- Videos
- Training (*CBT; ILT)
- Safety Minutes
- Inspector Training Series
- Newsletter
- Emails**
- Meetings

*CBT computer-based training; ILT Instructor Led Training
**NIST Leadership Board gets weekly updates on incident metrics with links to lessons learned. All supervisors get emails of newly posted incidents.

Continuous Improvement Processes

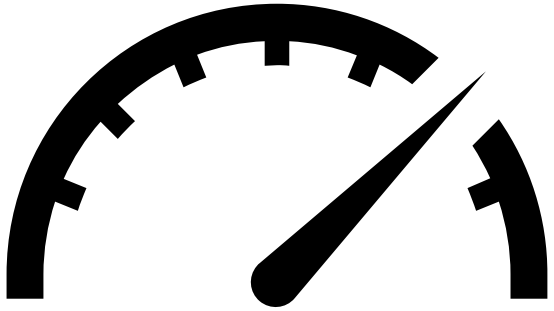
- ✓ Program Manager conducts review, benchmarking, user assessments
- ✓ Corrective actions are developed in response to incidents
- ✓ Remedial actions taken in response to workplace inspection deficiencies
- ✓ Annual Management Reviews for executive feedback on SMS
- ✓ Re-review of Hazard Reviews required every 1 to 3 years
- ✓ Stakeholder feedback: Executive Safety Committee, Safety Advisory Committee, staff via program reviews, safety email review (☺, 😐, ☹) and applications, training feedback, SITS-Box

- ❑ Corrective and Preventive Action Program (Planned)
- ❑ Monitoring, Measurement, and Assessments Program (Planned)



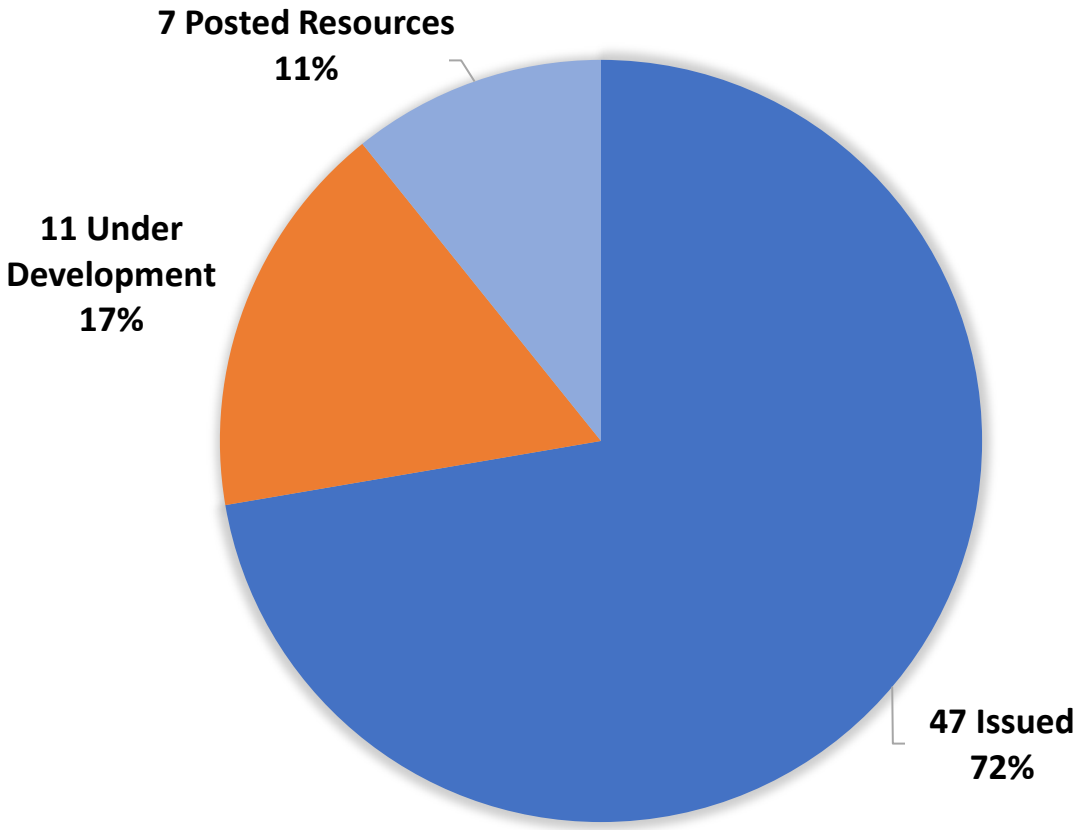
Performance Metrics

- ✓ Safety Management System Status
  - ✓ Completeness, i.e., does it cover NIST work and facilities?
  - ❑ Are all programs issued, communicated?
  - ❑ How well are programs being implemented?
- ✓ Workplace Inspection Data
- ✓ Incident Reporting and Investigation Data
- ✓ Corrective Action Data
  - ✓ Are actions completed in a timely manner?
  - ❑ Are actions effective?
- ✓ Training Data
- ✓ Safety Culture Survey Results
- ✓ Communications Data



Known gap: No assessment of efficacy of corrective actions.
Possible gap: How well are programs being implemented?

Final SMS Programs Planned for FY23 and FY24



Safety Culture Program (Directive Approved)

Change Management (Draft)

Corrective and Preventive Actions (OSHE draft)

Monitoring, Measurement and Assessment (FY24)

Non-R&D Contractor Safety (FY24)

Electrical Safety (Notice posted, in effect)

Walking Working Surfaces (draft posted)

Ladder Safety (draft posted)

Stormwater Management, Boulder*

Wastewater Management, Boulder*

Wastewater Management, Gaithersburg*

* Although these programs have not been formally issued for stakeholder review, NIST complies with all environmental regulatory requirements.

Communications: Metrics

- ✓ 13 Safety Minutes (65% open rate)
- ✓ 2 Safety Standard Newsletters (70% open rate)
- ✓ 8 Event notifications (70% open rate)
- ✓ 20 NIST announcements (68.5% open rate)

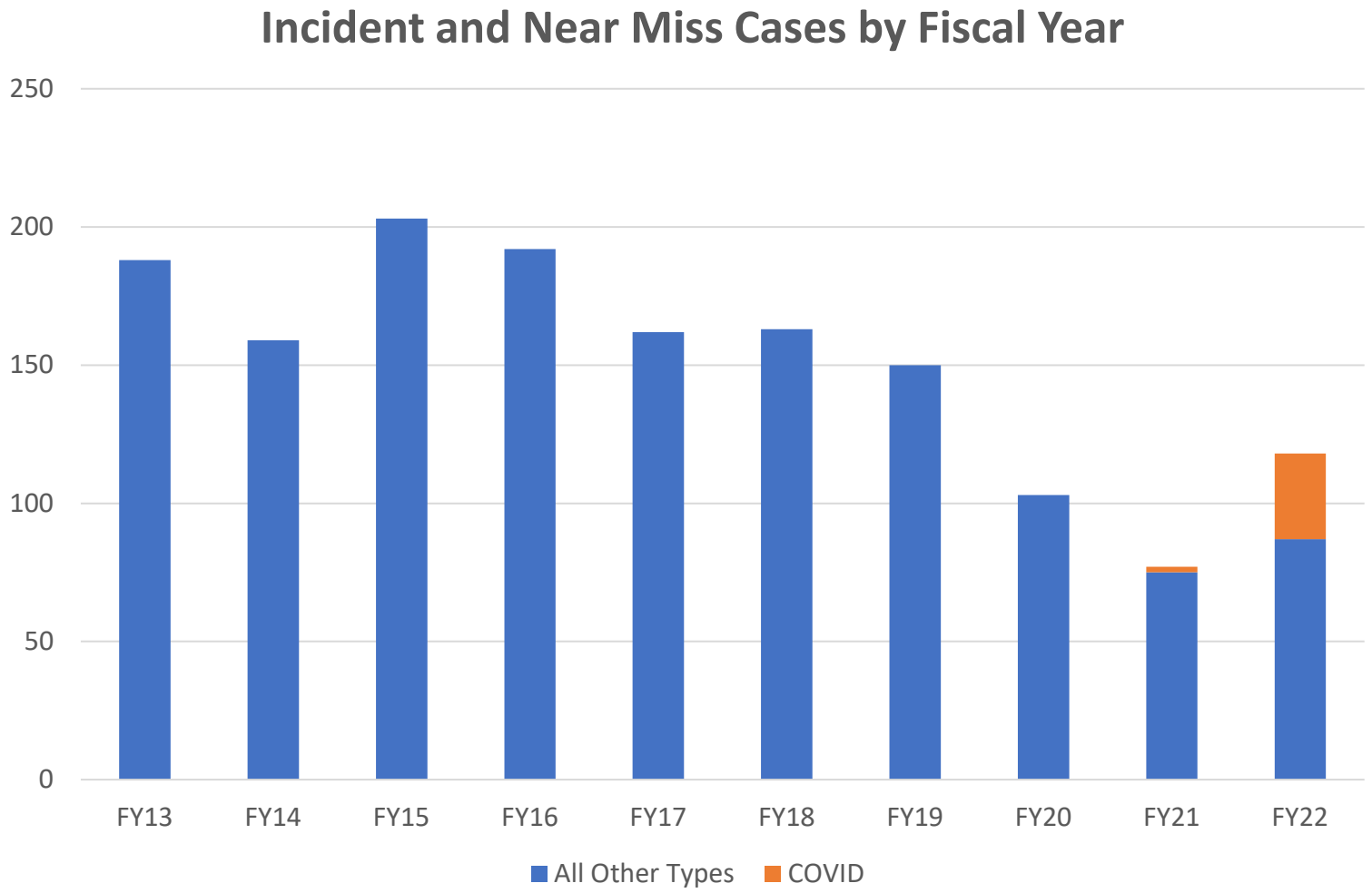
FY22 initiative to increase traffic to the NIST Safety Intranet was successful. Use was up from 6,974 to 9,052 visitors and 345,047 to 380,942 pageviews

Total Incident and Near Miss Case Data

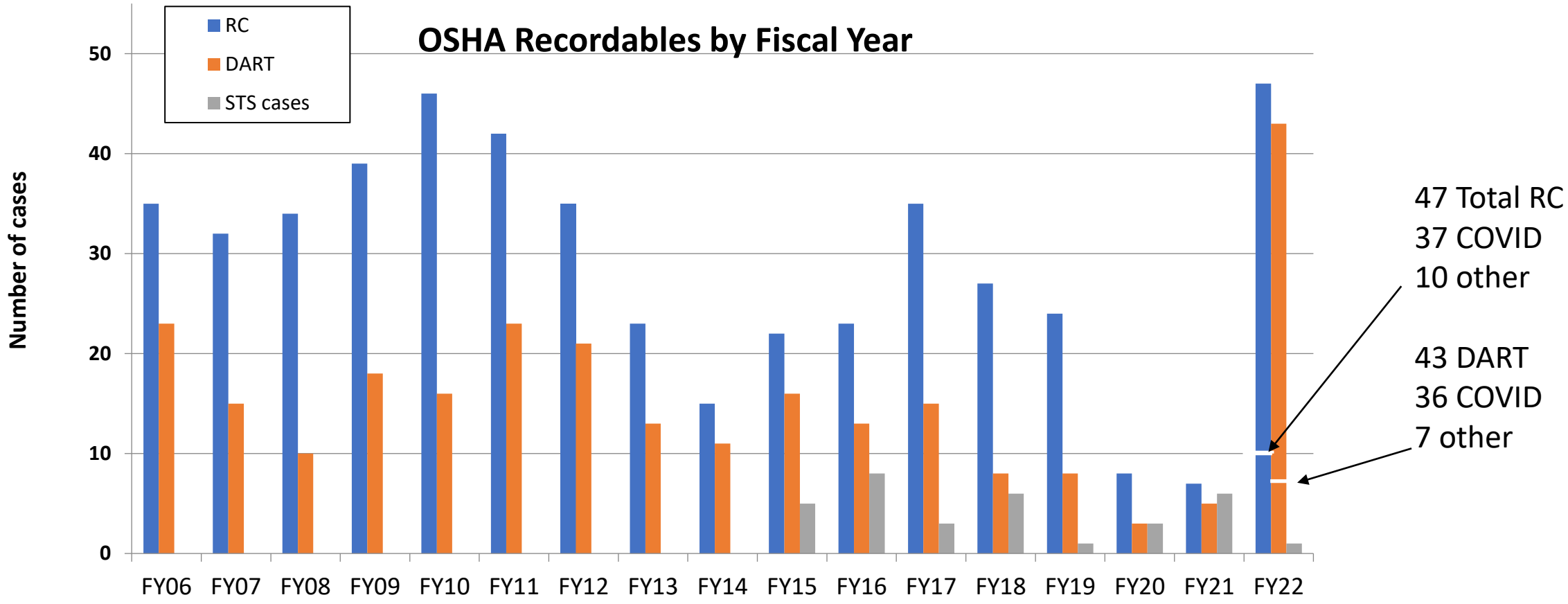
FY22 Incident and Near Miss Cases

Near misses, 23
Injury cases, 22
- 7 OSHA recordable injuries
Illness cases, 35
- 40 OSHA recordable illnesses (37 Covid-19 cases)
Property Damage, 12
Spill/Release, 6
Other, 6
Contamination, 2
Exposure, 2

Total Cases Reported, 108



OSHA Recordable Cases (RC), and Days Away, Restricted or Transferred (DART) Case Numbers

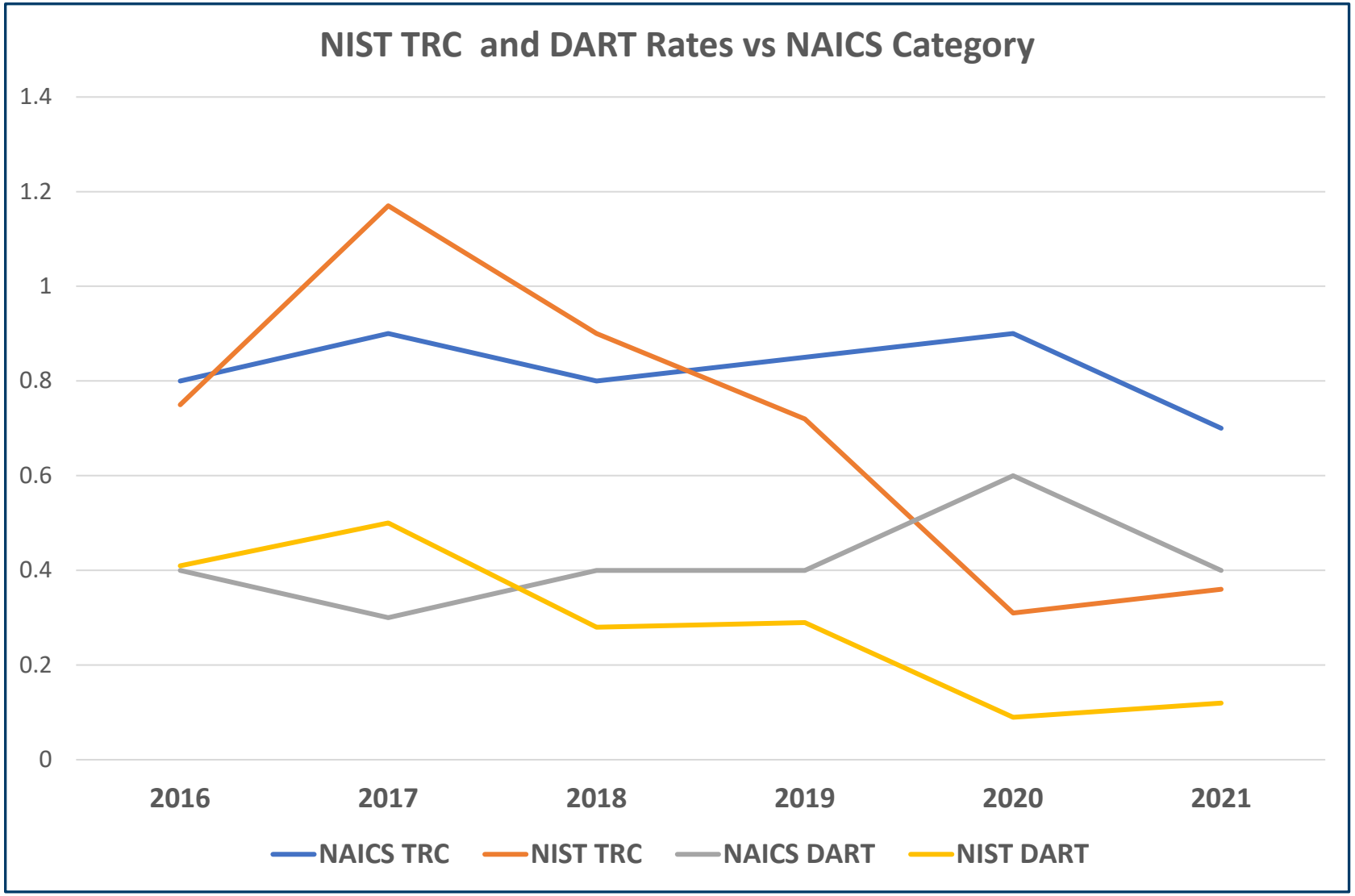


*STS= standard threshold shift for hearing loss cases

Comparison with Bureau of Labor Statistics Total Recordable Case and Days Away, Restricted or Transferred Rates

Comparison
NIST DART rates are typically the same or lower than the industry average, TRC rates are generally similar

NAICS Category Research and Development in the Physical, Engineering, and Life Sciences



FY22 OSHA Recordable Injury (7), Illness (3) + COVID (37) cases

22-IB-0001: Laceration to Three Fingers While Cutting Hose

22-IB-0002*: Employee Cut Using Knife to Open Box

22-IO-0004: Employee Injured by Elevator Door

22-IG-0017*: Employee Injured in Encounter with Campus Geese

22-IB-0004*: Employee Suffers Fractured Foot in Fall on Uneven Ground

22-IG-0034*: Employee Strains Back While Lifting Pipe

22-IG-0073*: Fall from Partial Collapse of Research Structure during Demolition (*currently under investigation internally and by OSHA*)

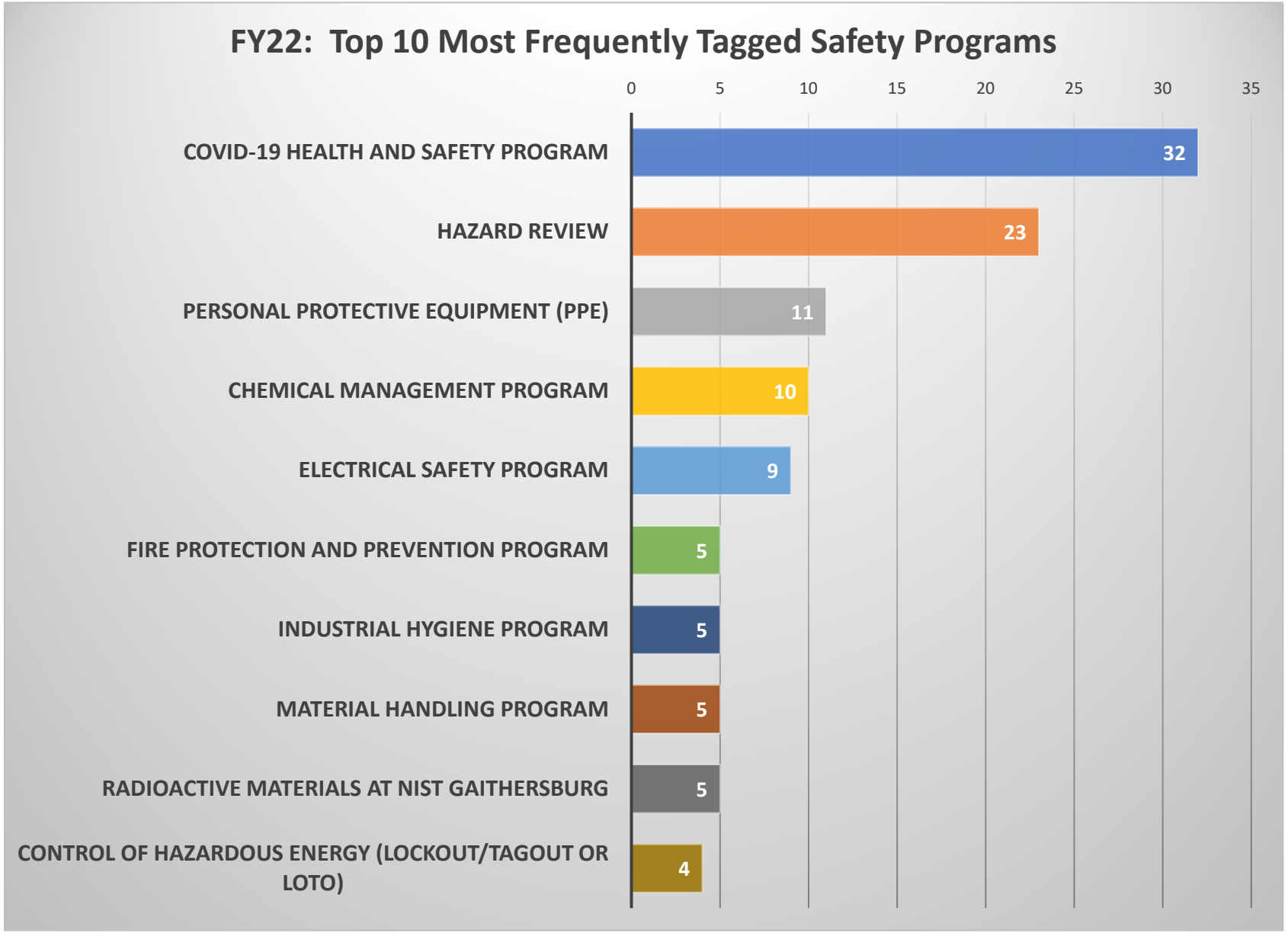
22-IG-0002: Employee Experiences Occupational Hearing Loss

22-IC-0001*: Employee Has Suspected Heat Rash/Allergic Reaction

22-IO-0006*: Employee Experiencing Neck and Back Pain at Telework Workstation

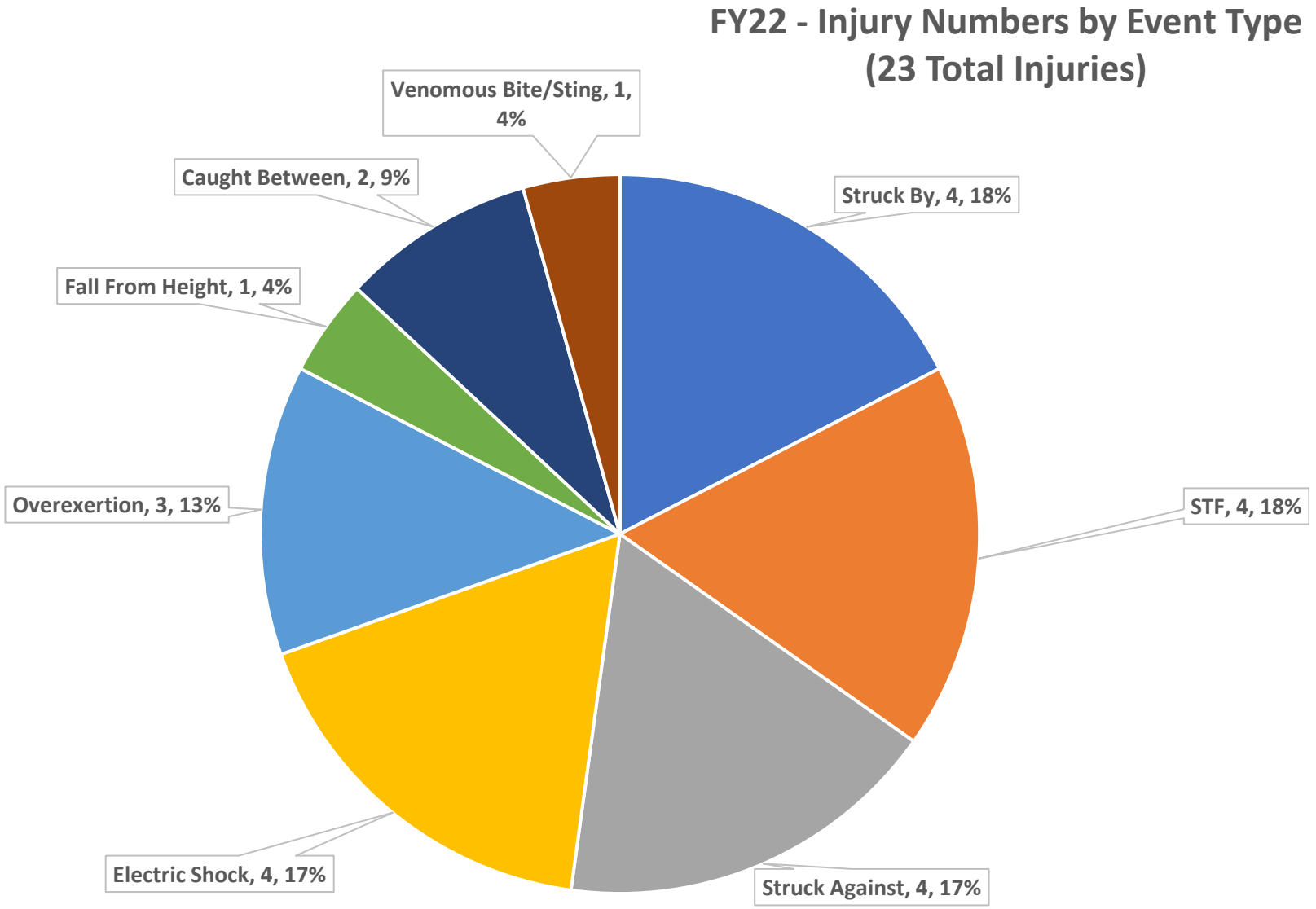
37 Recordable COVID Cases (36 DART cases)

*DART cases



Hazard Review was the most flagged safety program contributing to incidents in FY22, also in the previous 4 years.

Re-reviews, underway per NIST Director safety initiative, may prevent future incidents.



Key Points:

- Total number is low, so distribution and trends may not be significant
- Slips, trips and falls are lower than in previous years
- Electrical shock incidents are up
- Other categories are similar to previous years

Note: 12 safety minutes issued targeting incident prevention and specific issued encountered.

Example of Key Cases and Corrective Actions

21-IG-0057: Researchers Contaminated When Spill Occurs During Source Preparation

- Participation by lab management in radiation safety field auditing program
- Process for orienting staff to newly renovated spaces
- Updates to how Supervised User training is documented

22-IG-0067: Potential Exposure to Lead-based Paint

- Immediate preventive actions taken – facilities personnel will not conduct paint removal operations

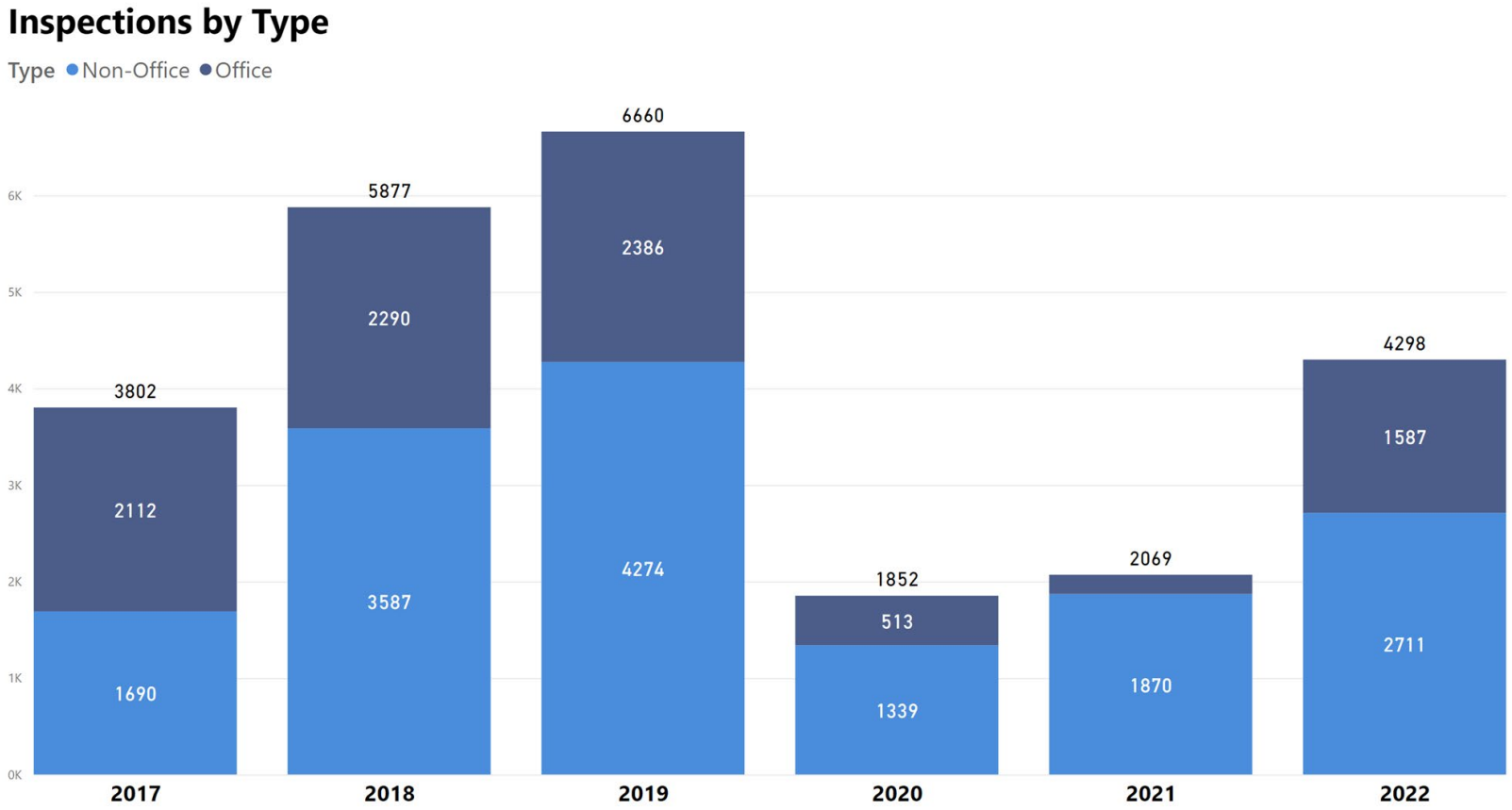
22-IG-0030 and 0037: Two cases involving low-oxygen sensors that alarmed.

- Maintenance/calibration procedures were found lacking in both, improvements were implemented

Multiple Incidents Involving Outdoor Bulk Cryogen Storage Tanks:

A multi-OU team was convened to improve safety of these shared resources. The team created and posted a cryogen tank inventory with responsible persons named, worked with the contracting officer to improve contract requirements for tank management, and developed requirements for routine inspection and maintenance of large cryogen tanks for inclusion in the Cryogen Safety Program.

Workplace Inspections Conducted



Offices inspected annually, labs and shops, twice each year

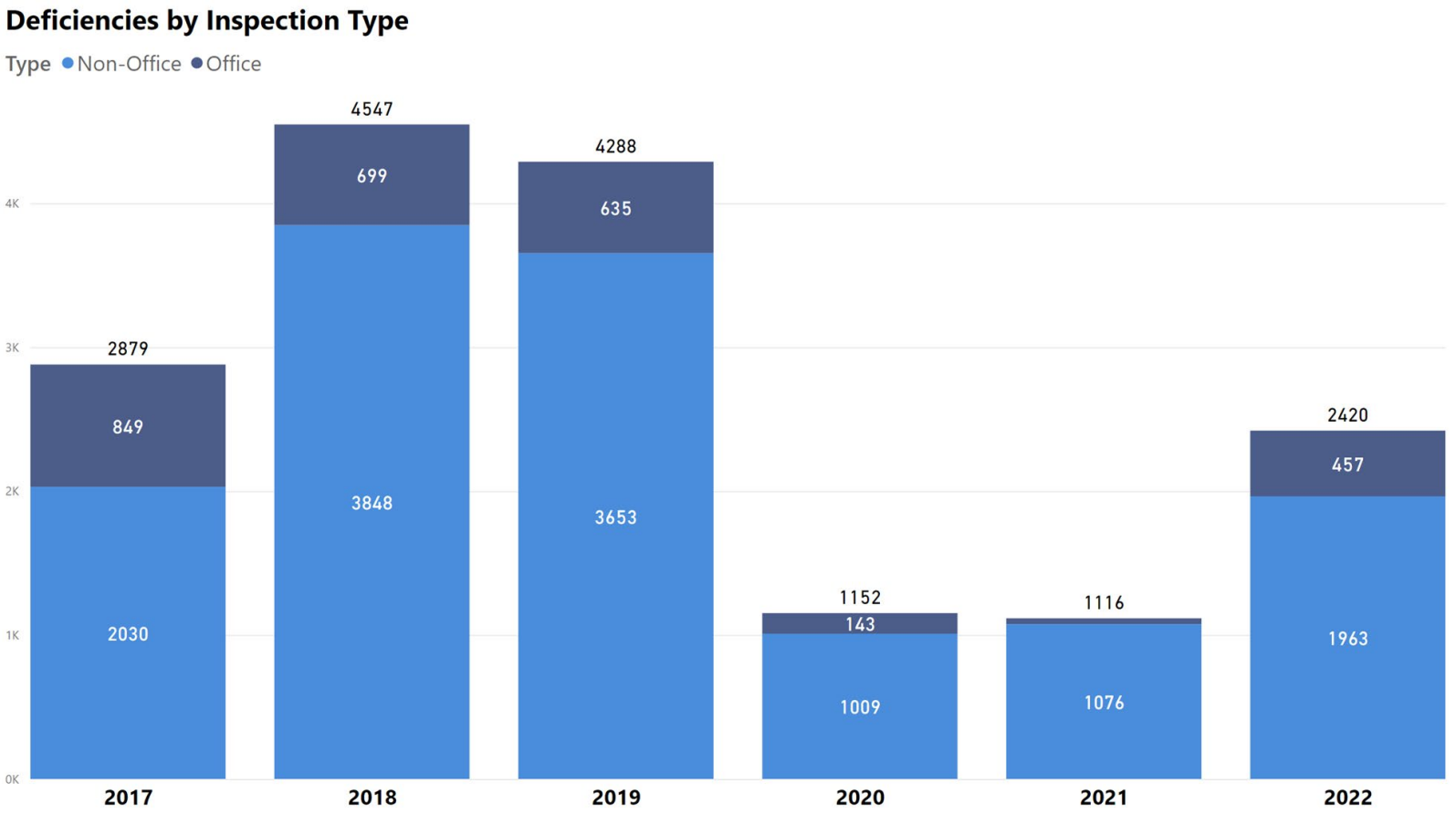
Number of unique rooms inspected was

- 3192 in FY22
- 3920 in FY19

Anticipated that in FY23 inspections will be similar to pre-pandemic numbers.

Some spaces are not occupied due to ongoing renovations

Workplace Inspection Deficiencies Recorded

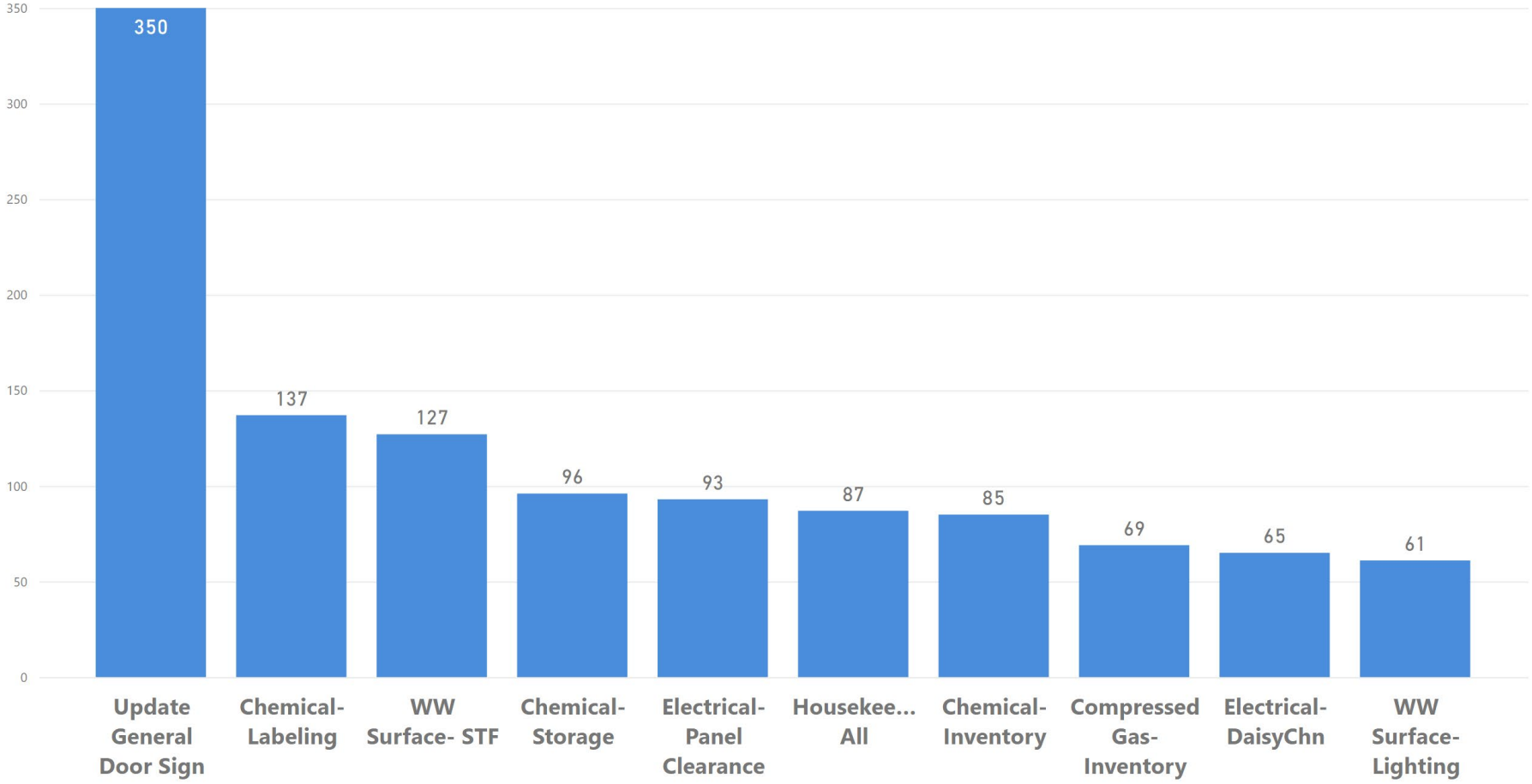


Average number of deficiencies per inspection decreased in again FY21 and FY22, indicating improvement in workspaces

FY	Rate
17	0.75
18	0.77
19	0.64
20	0.62
21	0.54
22	0.56

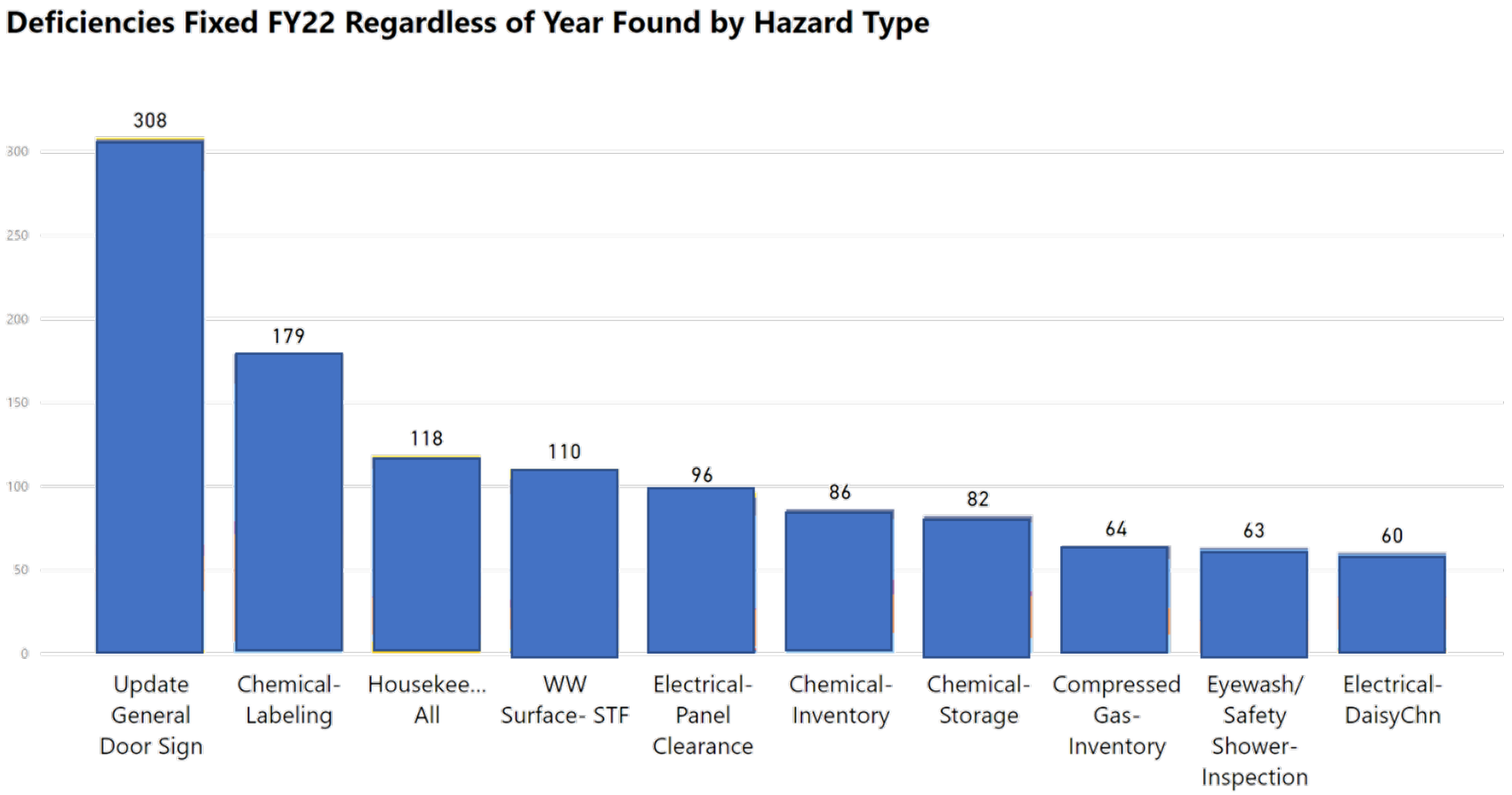
Ten Most Frequent Hazard Types by OU FY22

Ten Most Frequent Hazard Types FY22



1. Update General Door Sign
2. Chemical Labeling
3. Slip, Trips, and Falls
4. Chemical Storage
5. Electrical Panel Clearance
6. Housekeeping
7. Chemical Inventory
8. Compressed Gas Inventory
9. Electrical Daisy Chain
10. Lighting Out

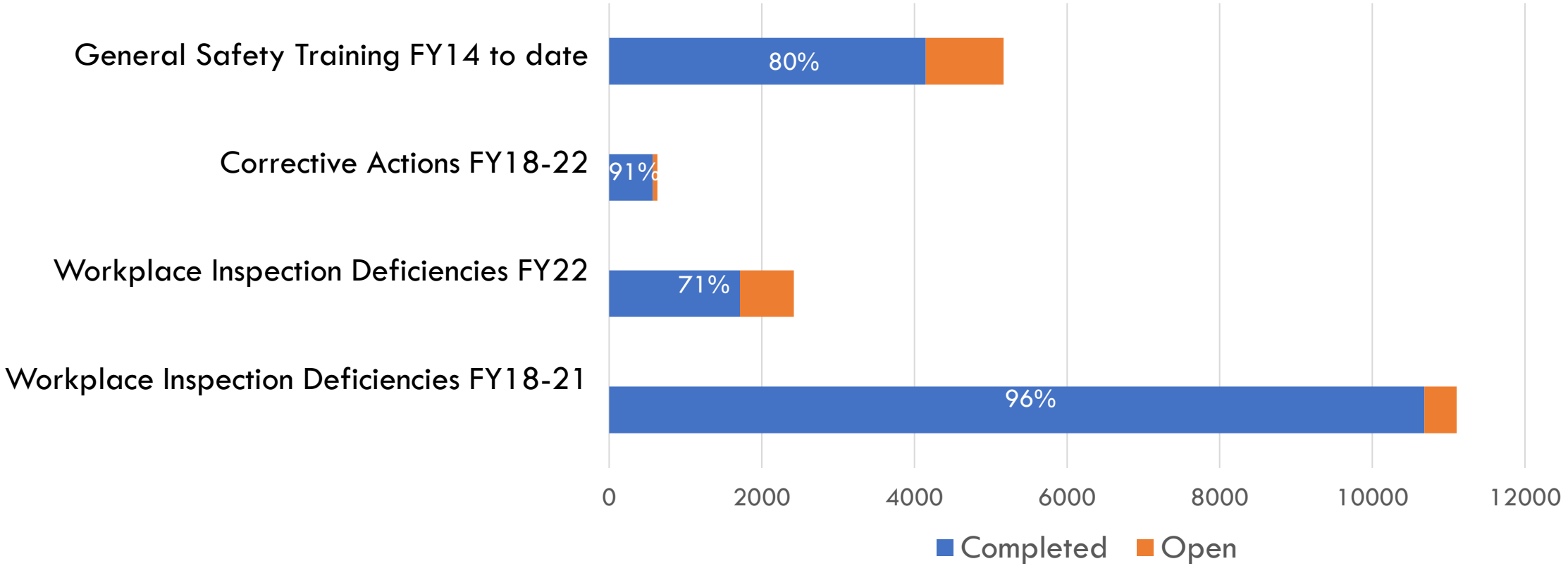
Deficiencies Fixed in FY22 by Hazard Type



Deficiencies fixed match those found:

1. Update General Door Sign (1)
2. Chemical Labeling (2)
3. Housekeeping (6)
4. Slips, Trips, and Falls (3)
5. Electrical Panel Clearance (5)
6. Chemical Inventory (7)
7. Chemical Storage (4)
8. Compressed Gas Inventory (8)
9. Eyewash/Safety Shower Inspection
10. Electrical Daisy Chain (9)

Completion: Training, Corrective Actions, Inspection Deficiencies



Gap: Supervisor follow-up on assigned safety training

Recent Serious Safety-Related Events

COVID-19 Pandemic, February 2020 – August 2022

- Long-term decrease in on-site staffing, lower occupancy work environment
- Possible loss of safety "muscle memory"
- Focus on health, but many routine safety activities suspended/postponed

TR-5 Incident: Partial melt of reactor fuel element cladding, Feb 3, 2021

- Staffing attrition with loss of experienced workforce played a key role
- Root causes: inadequate change management, procedures, oversight, training program, and safety culture

NFRL Incident: Fall from elevated structure during demolition, Sep 26, 2022

- Under investigation by NIST and OSHA

NIST Strategy and Actions To Improve Safety

Safety Stand-down (October 7, 2022)

- Recommit to the basic NIST philosophy and policy of taking personal responsibili
  for safety of oneself and others
- Review hazardous activities and think about how to work safely

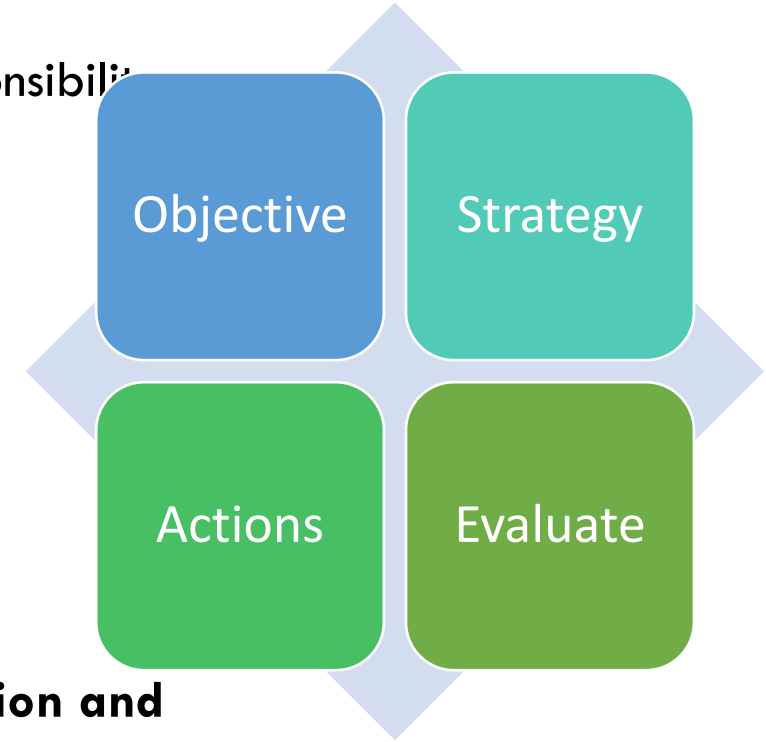
Focus on Re-Review of Hazardous Activities in FY23

- Fresh eyes, appropriate expertise, observe work practices as feasible
- Lab and Office Directors report progress to NIST Associate Directors

Accelerate Safety Culture Survey Launch (survey start date 12/12/22)

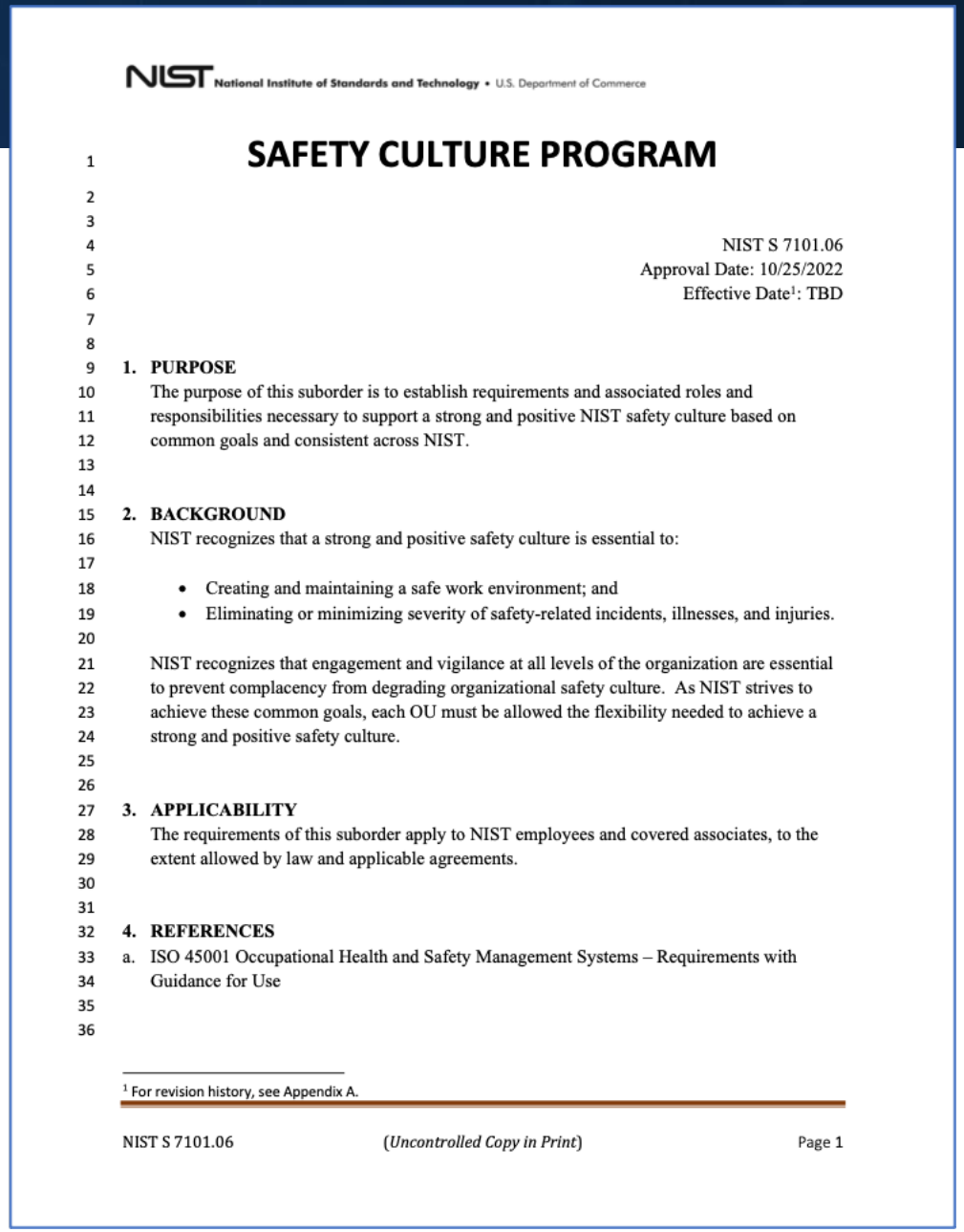
Engage external Safety Commission to review safety program implementation and safety culture (January 2023)

NASEM Workshop to evaluate the effects of the post-pandemic, hybrid work on safety culture, practices, training, mentoring in a research lab environment



New Safety Culture Program

- Acknowledges importance of safety culture in creating and maintaining a safe workplace
- Formalizes existing practices into requirements
  - Safety culture surveys
  - Related goals and action plans
  - Local safety committees
- Encourages more opportunities for employee participation, engagement, and recognition
- Additionally requires executives to define the vision for safety culture, via ”attributes”
- Reinforces requirement for Management Observation visits with staff in their workspace



NIST National Institute of Standards and Technology • U.S. Department of Commerce

SAFETY CULTURE PROGRAM

NIST S 7101.06
Approval Date: 10/25/2022
Effective Date[1]: TBD

1. PURPOSE

The purpose of this suborder is to establish requirements and associated roles and responsibilities necessary to support a strong and positive NIST safety culture based on common goals and consistent across NIST.

2. BACKGROUND

NIST recognizes that a strong and positive safety culture is essential to:

- Creating and maintaining a safe work environment; and
- Eliminating or minimizing severity of safety-related incidents, illnesses, and injuries.

NIST recognizes that engagement and vigilance at all levels of the organization are essential to prevent complacency from degrading organizational safety culture. As NIST strives to achieve these common goals, each OU must be allowed the flexibility needed to achieve a strong and positive safety culture.

3. APPLICABILITY

The requirements of this suborder apply to NIST employees and covered associates, to the extent allowed by law and applicable agreements.

4. REFERENCES

a. ISO 45001 Occupational Health and Safety Management Systems – Requirements with Guidance for Use

[1] For revision history, see Appendix A.

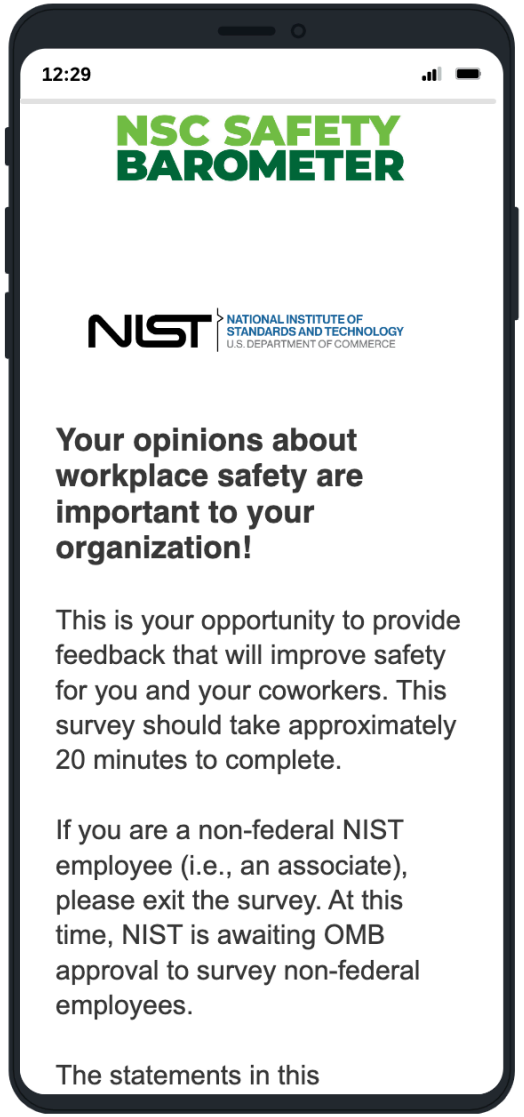
Safety Culture Program Implementation Activities

Develop and Issue Safety Culture Program

- ✓ Approved by Executive Safety Committee (October)
- ✓ Presented to Safety Advisory Committee (November)
- Tools for development: incorporate training on safety culture into NIST leadership and general safety training presentations (Feb-March)

Implement Concurrent with Issuance

- ✓ ESC establishes safety culture attributes (Dec)
- SAC reviews attributes, provide example actions to foster attributes (Jan-Feb)
- Safety culture survey– Launched Dec. 12, 2022



Safety Climate Assessment → Safety Culture Survey

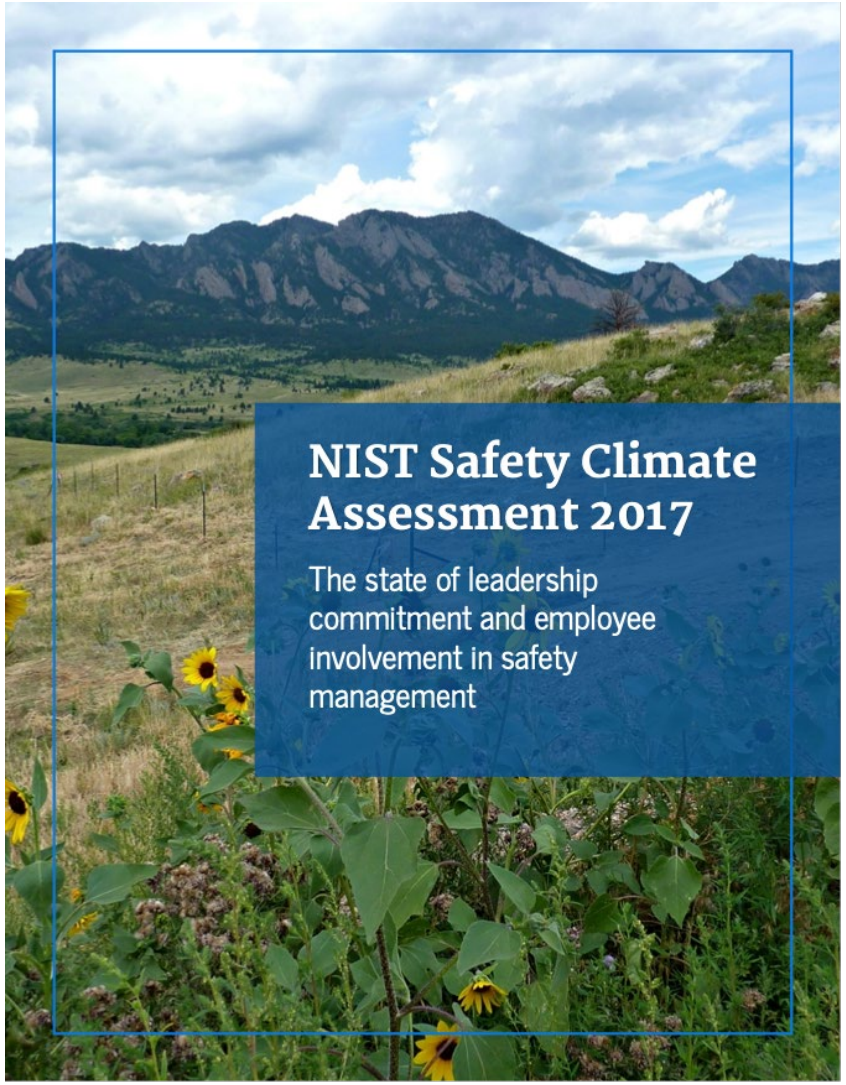
Safety Climate Assessments were issued 2011, 2014, 2017

- Detailed, thorough, developed in-house
- Included interviews with focus groups

In 2020, COVID resulted in limited on-site work; NIST did not conduct a survey but relied on the Federal Employee Viewpoint survey to assess COVID safety views. Staff rated NIST very positively.

In FY 2023, a new Safety Culture Survey is being issued (12/12/22)

- Hosted by 3rd party, National Safety Council
- Ability to benchmark with other like organizations
- Ability to add some NIST-specific questions (trending)
- Interviews with focus groups not included at this time



Key Findings of the 2017 Safety Climate Assessment

1. 84% agree or strongly agree that NIST has a positive safety culture. Supervisors' perceptions of the safety culture were the most positive; skilled-trade staff's views were less positive.
2. 89% agreed or strongly agreed their work areas are safe.
3. 88% felt comfortable speaking to their supervisor about safety concerns, 85% said supervisors encourage them to report hazards; 83% said supervisors help address safety concerns
4. 41% were moderately likely or not at all likely to report a near miss
5. 53% of NIST technical staff said that safety program requirements are easy to understand; 19% of technical staff disagreed or strongly disagreed that this is true; 28% neither agreed or disagreed
6. At the top of the list of thousands of recommended actions for managers to improve safety culture, was the request that managers increase safety communications, particularly with us in our work areas.

In 2022, five years later, there has been staff turnover. About 30%- 40% of NIST Staff were not here in 2017.

High turnover in supervisor and leadership positions. New staff experiences of NIST are likely very different.

Participation in 2017 was 37.7% NIST-wide

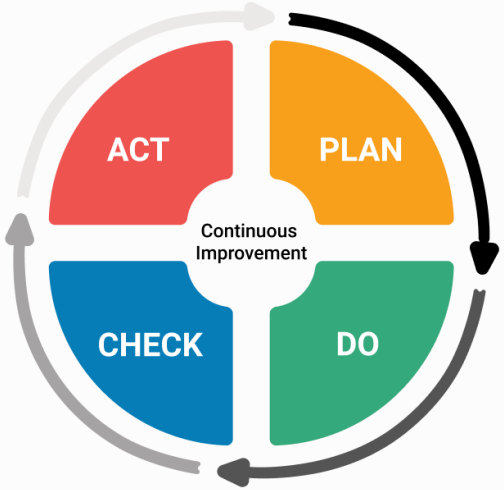
Safety-Related Risks and Opportunities: 30,000' View

Risks	Opportunities
Ageing infrastructure	Prioritization of funding to address facilities issues; collaboration between facilities and safety
Safety Management System is not fully integrated into operations	Strengthen partnerships and provide safety services in a manner that facilitates integration
No audit or assessment program in place to assess safety compliance	Develop and implement Monitoring, Measurements and Assessment Program
Safety complacency	Create conditions to strengthen safety culture, NIST-wide, at all levels

FY23 Action Plan Designed to Address Risks

Executive Safety Committee Endorsed FY23 Action Plan

- **Executive Safety Committee Initiative: Implement Safety Culture Program**
- **NIST Director's Initiative: Re-evaluate hazard reviews**
  - Fresh eyes, observe work to ensure documentation reflects practice
- **Chief Safety Officer Initiatives: Increase OU outreach; benchmark**
- **Safety Management System: Implementation, Deployments, Tools**
  - Issue and deploy 9 of the 11 remaining safety programs
  - Improve integration of safety IT applications for ease of use
- **Workplace Inspection Program: Improve Data Quality**
  - Collaborate with Safety Advisory Committee to develop a standard list of inspection questions to provide consistent data to compare across NIST



Questions?