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EFCOG DIGITAL TRANSFORMATION WEBINAR: SANDIA LABS' ENVIRONMENT, SAFETY & HEALTH

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Katiana Otero, Systems Engineer

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Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

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AGENDA

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Time	Topic	Presenter
12:30pm	Introduction from Lead	Brittni Romero
	- ES&H Strategic Goals	Brittni Romero
12:35pm	D4K Digital Journey Goals	Brittni Romero
	- ES&H Digital Journey Team Members	Brittni Romero
12:40pm	IT Process & Data Management Program	Julie Cordero / Katiana Otero
	Strategic Integrations	Julie Cordero
	Technical Integrations	Julie Cordero
	Communications	Julie Cordero
	Information Management Program	Brittni Romero
	Compliance Obligations Program	Brittni Romero
	Digital Journey Team	Katiana Otero
	Work Planning & Control Evolution	Brittni Romero
	Emergency Management	Katiana Otero
1:30pm	Closing Remarks / Questions	Brittni Romero

ES&H STRATEGIC GOALS



Goal 1

Invest in People and Culture

Amplify the ES&H workforce's strength and foster a culture of community, agility, trust, and wellness



Goal 2

Enhance Operational Excellence and Leadership Engagement

Operate within a performance excellence framework and improve leadership engagement to optimize ES&H capabilities



Goal 3

Integrate ES&H Principles into Mission Delivery

Partner to foster a culture of intelligent, risk-informed decision-making and innovation to improve ES&H performance



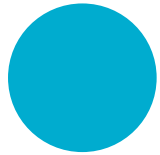
Goal 4

Strengthen Preparedness and Resiliency

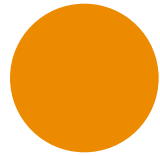
Improve ES&H and Sandia preparedness and resiliency continuously

**LABS STRATEGY GOAL 1:
ACCELERATE INNOVATION**

GOAL TWO: ENHANCE OPERATIONAL EXCELLENCE & LEADERSHIP ENGAGEMENT



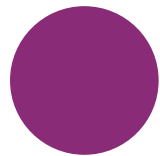
IT Roadmap for ES&H



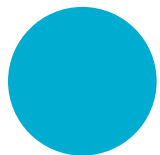
Chemical Information System



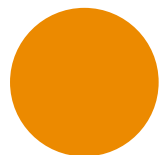
Compliance Obligations



Measures and Metrics



Unleash Excellence



Radiation Protection: Dosimetry and Source Tracking

- Engaging our stakeholders/line partners for crucial feedback and to drive improvements
- Developing user-friendly experiences for internal and external stakeholders
- Analyzing ES&H requirements and obligations that flow into the labs and performance metrics
- Maturing the management system
- Creating impactful metrics that lead to informed decisions
- Maturing the ES&H Governance Board
- Engaging with leadership across the Laboratories
- Improving partnerships and relationships internally and externally

ES&H | DIGITAL JOURNEY GOALS




- Establish a centralized toolset to support ES&H & Labs business processes
- Improve accessibility of information
- Improve perception of ES&H capabilities, improve confidence & credibility in resources we provide
- Enable data-informed decisions
- Reduce administrative burden of ES&H professionals and members of the workforce – increased ‘boots on the ground’ engagement
- Innovate and move out of the stone age



ES&H DIGITAL JOURNEY | TEAMS





IT Process &
Data
Management
Program

ESHIELD VISION

ESHield is a 7-Year Investment Project

ESHield
The Future
of ES&H Tools & Data

To meet the Environment Safety & Health needs at Sandia, ESHield is streamlining and consolidating IT tools & data. This will provide a one-stop shop for managing requirements and analytical needs.

Work Planning & Control
FY25+

Chemical Management
FY25+

Compliance Obligations
FY24+

Multi-Org Work Agreement (MOWA)
FY23

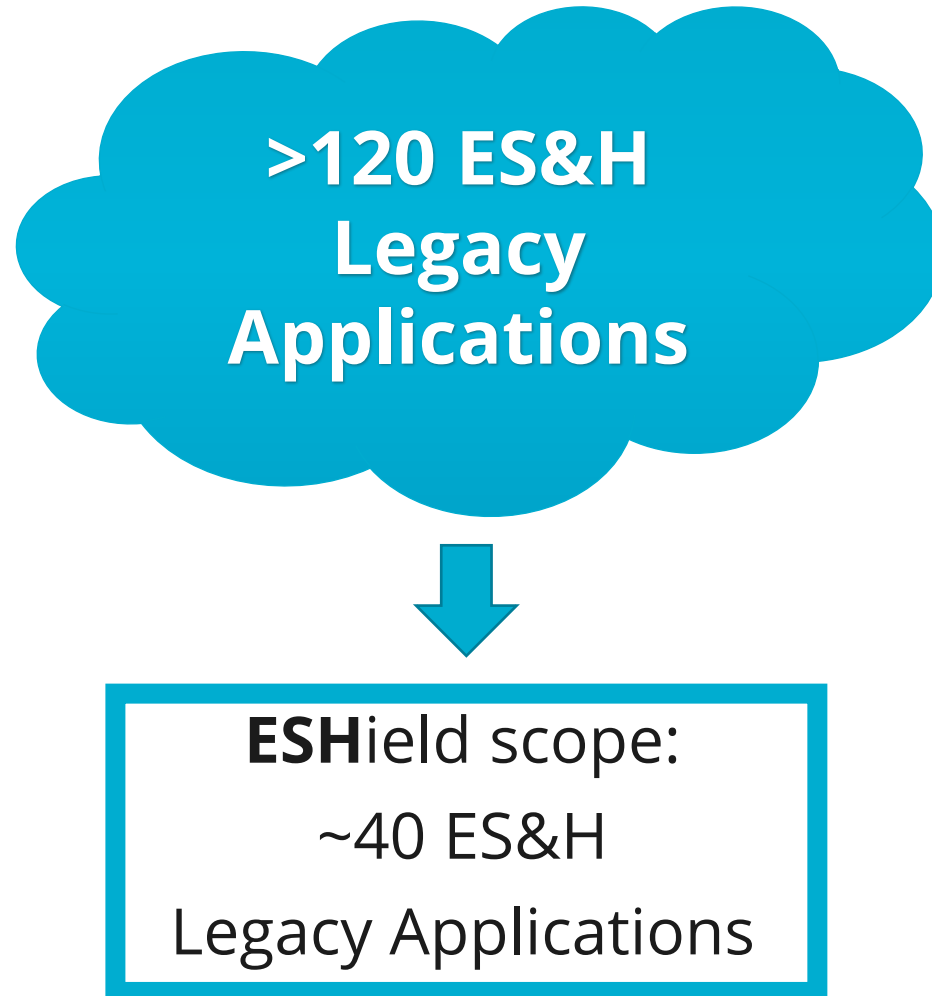
Inspections
FY22+

ES&H Events Management
FY21

Now my ES&H tools are in one handy place, so it's easy to provide my organization with all their current needs.

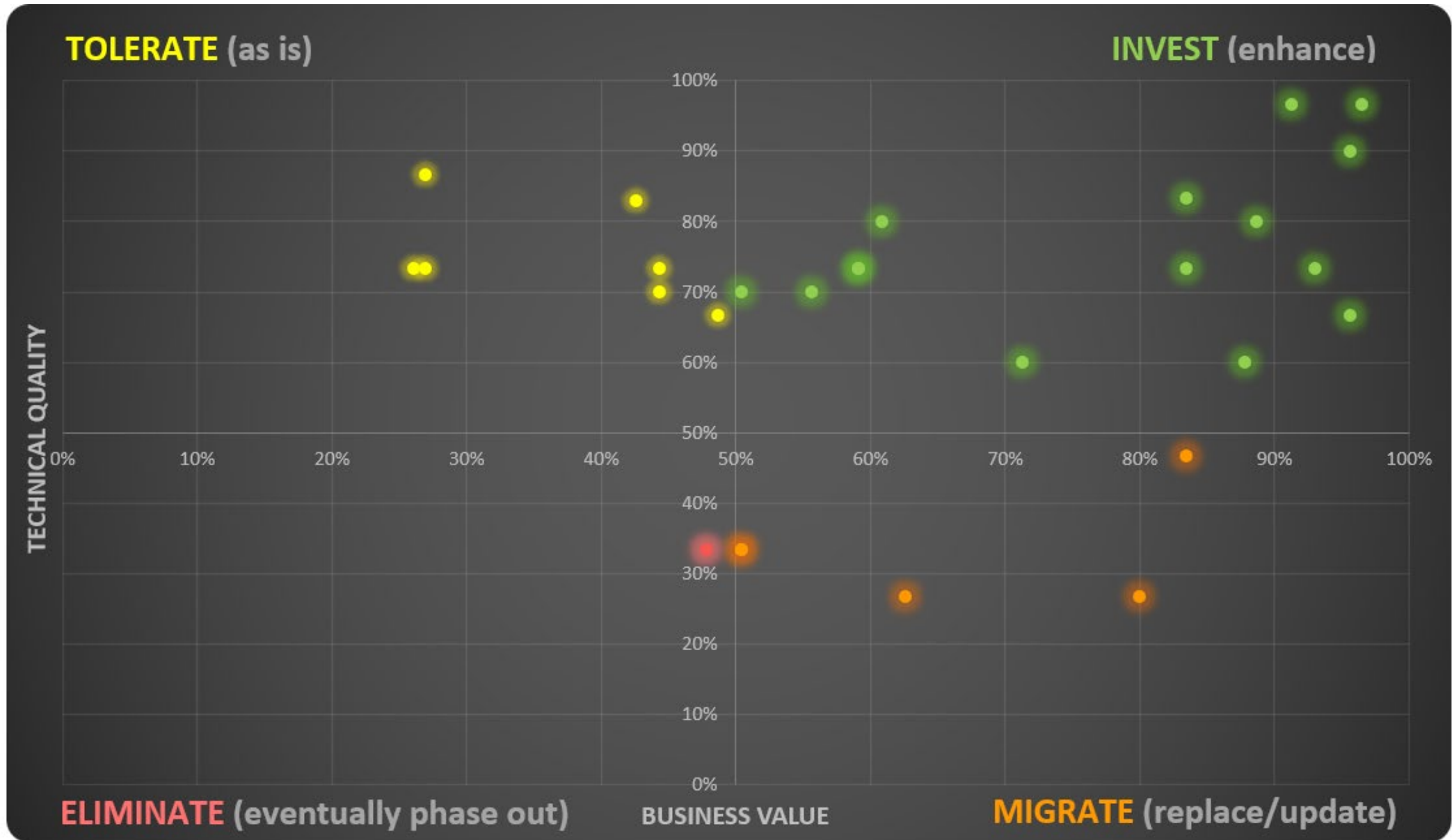
ES&H Integrated Enterprise Laboratories Data

"Innovation is not getting to pick your favorite tool. It's making sure that we have that common digital thread which means we have common tools, common methodologies...."
- Sandia Deputy Labs Director



- ✓ Activities not already using an Enterprise Application
- ✓ Leadership priorities
- ✓ Highest value
- ✓ Early adopters
- ✓ Portfolio Rationalization

PORTFOLIO RATIONALIZATION RESULTS PLOTTED ON GARTNER TIME QUADRANT



Graph based on Gartner, Inc.'s TIME process [1].

CHANGE AGENTS – COMMUNICATE THE VISION & KEY MESSAGES



ESHield Intent:

- Develop modern applications in commercial off-the-shelf (COTS) platforms (consistent with corporate approach for consolidation and corporate licensing)
- Reduce large IT infrastructure that contains excessive customization of tools and stovepipe processes
- Position ES&H to utilize predictive analytics and data modeling

What ESHield is NOT:

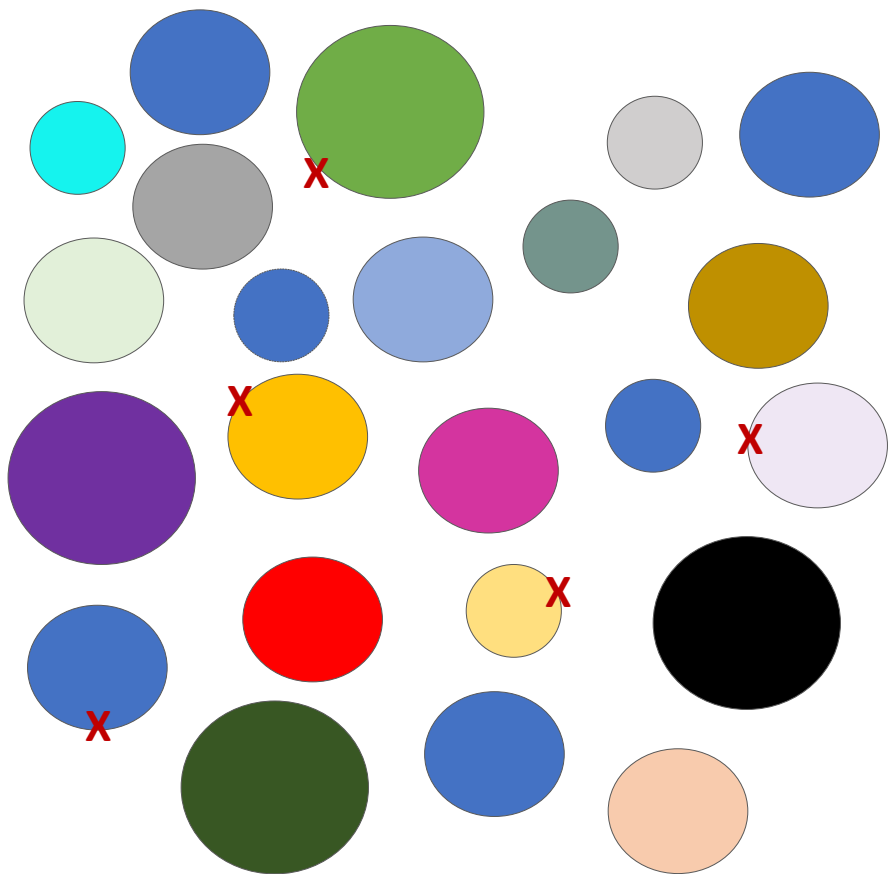
- ESHield is not Event Management ONLY
- ESHield is not just one project
- ESHield is not just replacing like-for-like
- ESHield is not a specific vendor platform
- ESHield will not replace ALL ES&H applications

Change can be hard....
join us on this journey



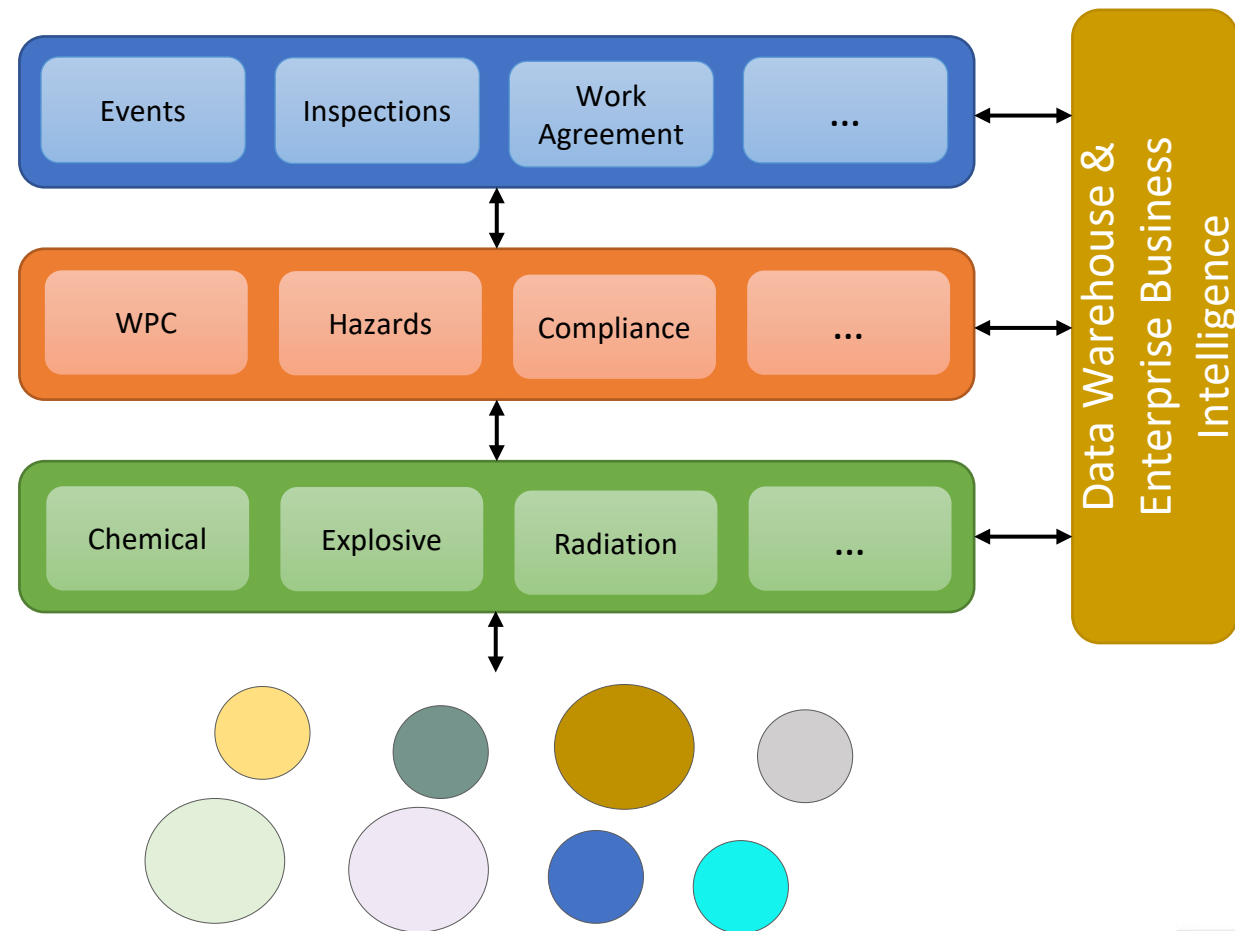
Previous State of ES&H Tools (prior to ESHield)

- Each tool is independently designed and built
- No standards across tools
- Different technologies, hard to support
- Old technologies have cyber vulnerabilities



Future State of ES&H Tools (ESHield End-State)

- Reduced set of IT platforms and technologies
- Improved standardization across tools
- Vendor supported, modern tools
- Integrated processes and data



FY25 ESHIELD ROADMAP



Implementation Deliverables

- Radiation Protection – Process Knowledge Evaluation
- Material Management (Explosive)
- Non-NRTL
- Work Planning & Control (WPC) / Primary Hazards & Aspect Survey (PHAS) Pilot
- Material Management (Chemical)
- RadDose (Dosimetry)

Related Efforts

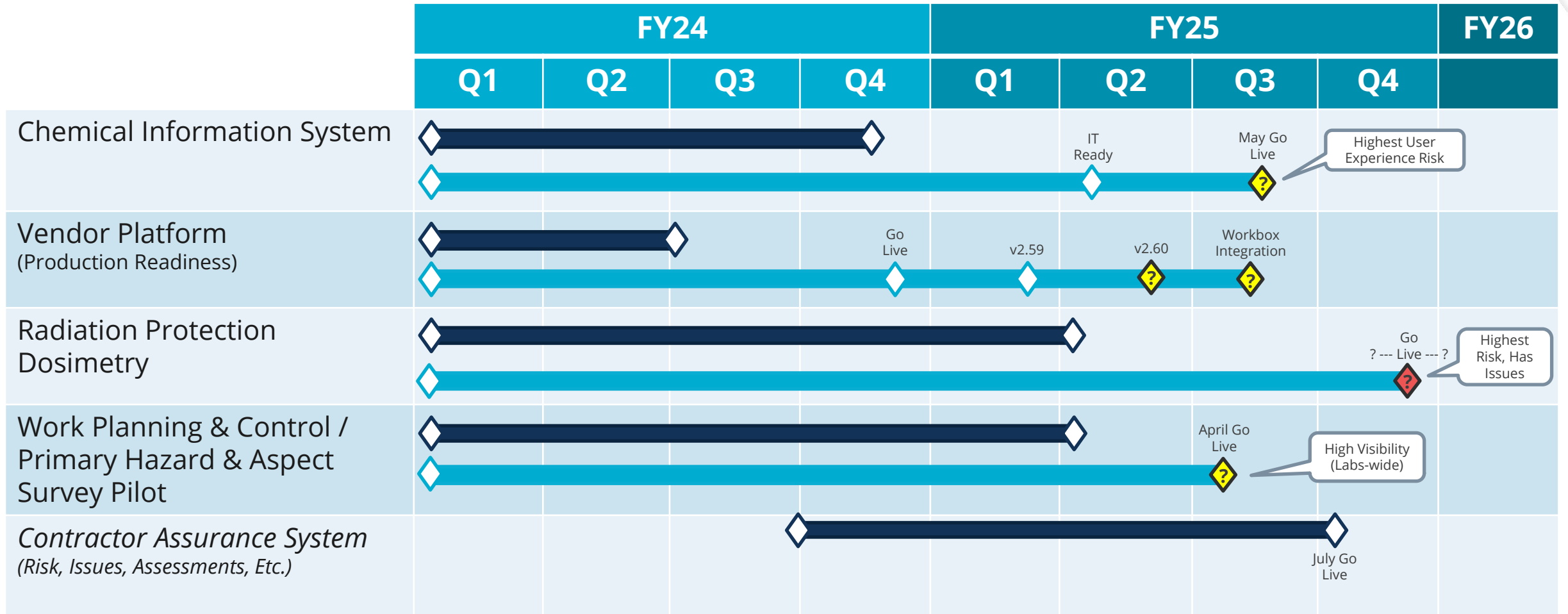
- Portfolio Rationalization
- Multi-Vendor Experience (MVE)
- User Experience
- Change Management

New Project Options

- Material Management (Radiation Protection)
- Pressure Safety
- Mobility Evaluation
- Radiation Protection – Job-Site Hazard Evaluation
- Stakeholder Management
- Biosafety
- Accelerators
- SharePoint migrations to SharePoint Online
 - SharePoint will be turned off in April 2026
- Others ???

DRAFT

FY25 TIMELINE FOR MAJOR RELEASES



Original Re-baselined Estimated, Proposal Pending (Color is confidence; red = low, yellow = medium)



TURNING DATA INTO INSIGHTS...

Goal

Establishing a comprehensive ES&H Measures and Metrics (M&M) Program to monitor and report the performance and health of ES&H program areas.

END PRODUCT

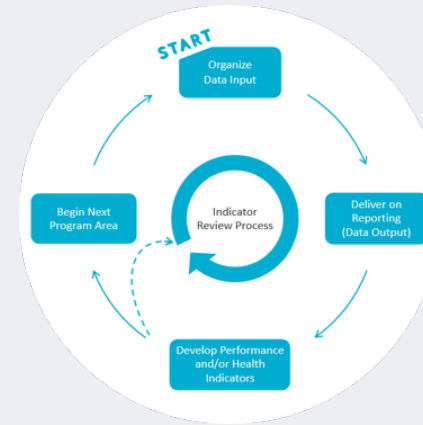
AN INTERACTIVE DASHBOARD THAT ALLOWS LEADERSHIP TO SEE THE WELL-BEING OF PROGRAM AREAS BASED ON PROGRAM AREA **PERFORMANCE AND/OR HEALTH INDICATORS**.



ALL REPORTING AND VISUALIZATIONS LIVE IN EBI WITH ACCESS DEPENDENT ON EACH PROGRAM AREA'S EXPECTATIONS AND LEADERSHIP'S NEEDS.

PROCESS

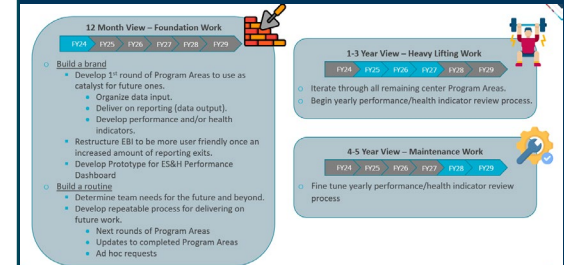
PROGRAM AREAS IN ES&H WILL GO THROUGH THE SAME PROCESS AS DESCRIBED BELOW.



1. ORGANIZE DATA INPUT
2. DELIVER ON REPORTING
3. DEVELOP PERFORMANCE AND/OR HEALTH INDICATOR
4. REFINE INDICATOR EVERY 12-14 MONTHS

ROADMAP

IN COORDINATION WITH PROGRAM AREA LEADS AND MANAGERS, EACH ES&H PROGRAM AREA WILL BE EVALUATED TO ESTABLISH A COMPREHENSIVE SET OF MEASURES.



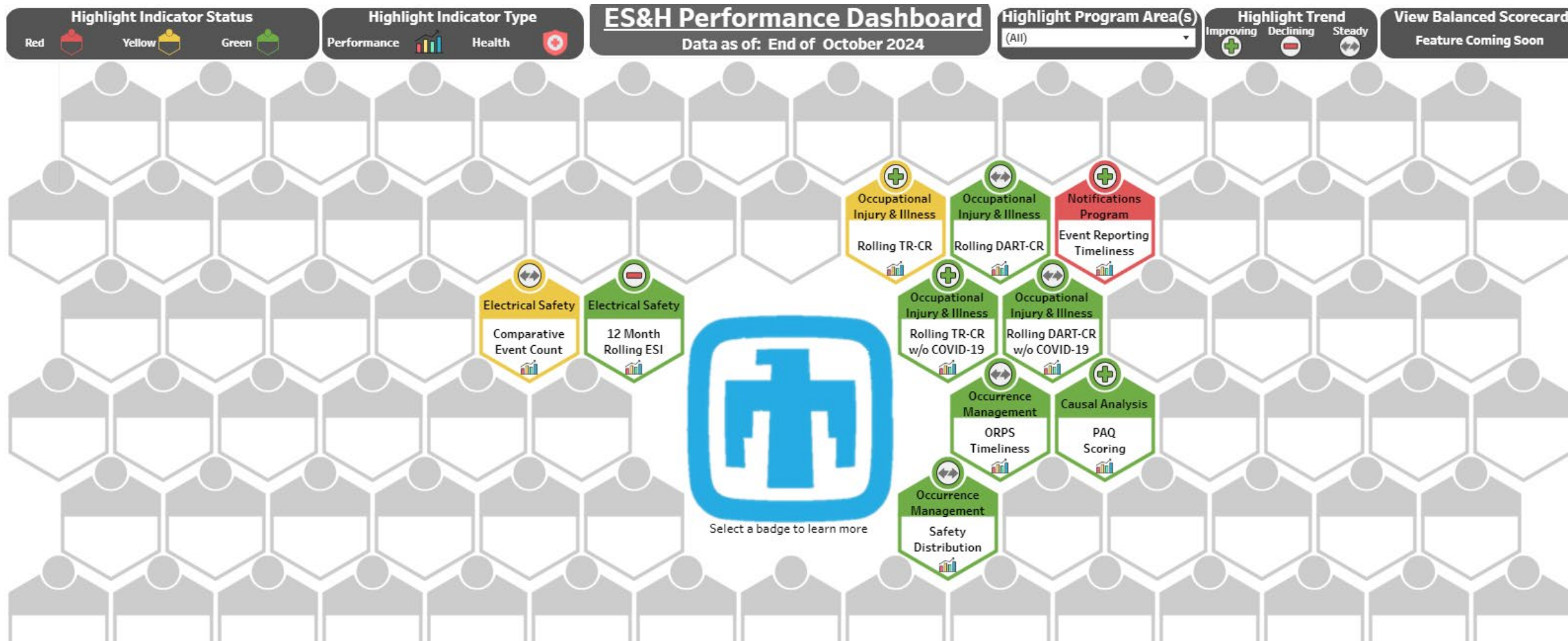
THE MEASURES DATA WILL BE MIGRATED TO THE ES&H DATA WAREHOUSE IN ORDER TO AUTOMATE THE PRODUCTION, REPORTING, AND ANALYSIS OF PERFORMANCE METRICS.

... TURNING INSIGHTS INTO ACTION



ES&H PERFORMANCE DASHBOARD

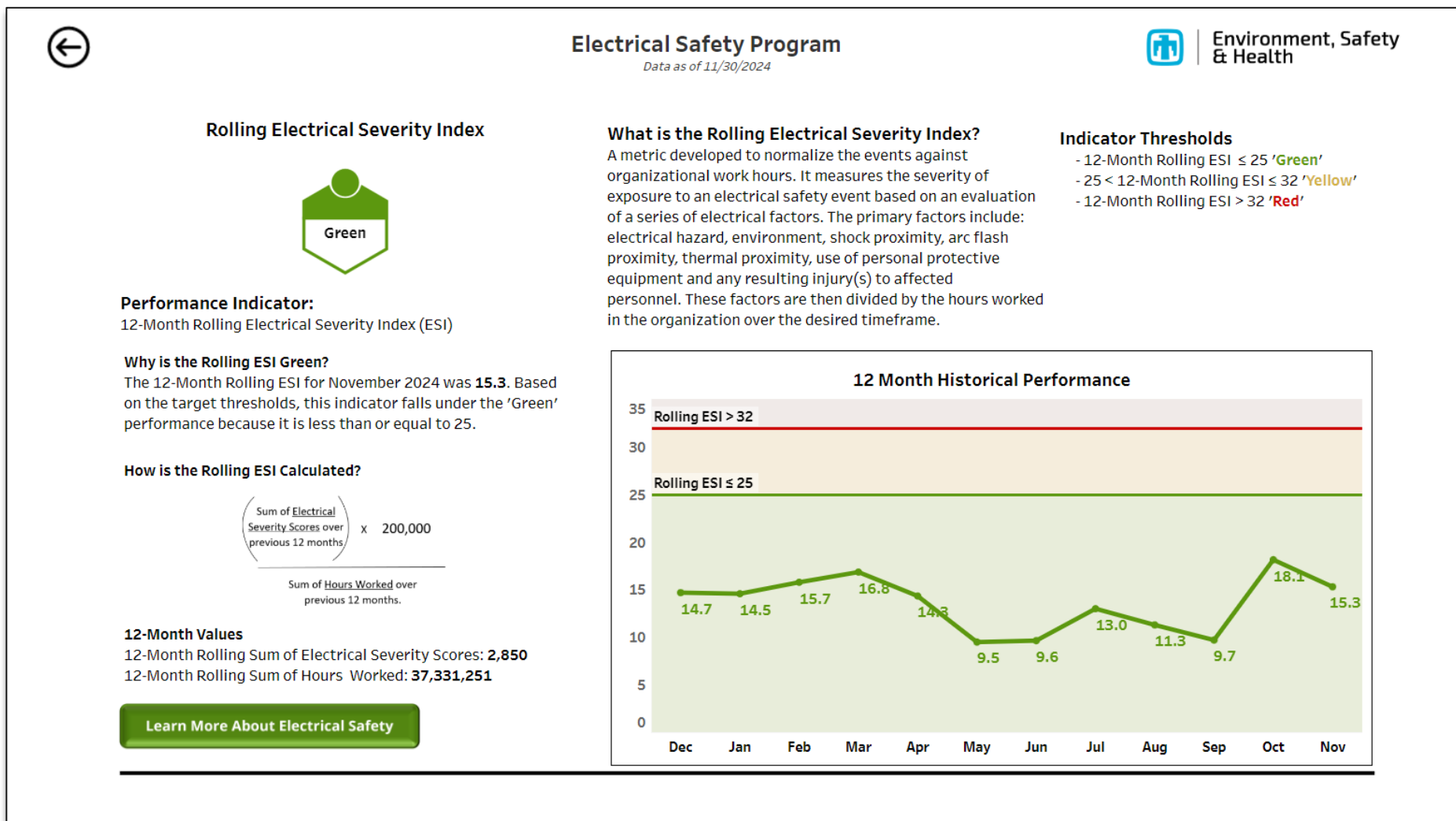
LOCATED IN THE ENTERPRISE BUSINESS INTELLIGENCE PORTAL





INDICATOR DASHBOARD

LOCATED IN THE ENTERPRISE BUSINESS INTELLIGENCE PORTAL





PROGRAM SPECIFIC DASHBOARD

LOCATED IN THE ENTERPRISE BUSINESS INTELLIGENCE PORTAL



Welcome to the SNL Electrical Safety Performance Measures

Electrical Impact Tracker

Electrical Impact Analysis

CES Slide Deck Visuals

Electrical Safety Performance



Together, we create a **Stronger** Sandia!



MEASURES & METRICS ROADMAP

12 Month View – Foundation Work



- Build a brand
 - Develop 1st round of Program Areas to use as catalyst for future ones.
 - Organize data input.
 - Deliver on reporting (data output).
 - Develop performance and/or health indicators.
 - Restructure Enterprise Business Intelligence Portal to be more user friendly once an increased amount of reporting exits.
 - Develop Prototype for ES&H Performance Dashboard.
- Build a routine
 - Determine team needs for the future and beyond.
 - Develop repeatable process for delivering on future work.
 - Next rounds of Program Areas.
 - Updates to completed Program Areas.
 - Ad hoc requests.

Where We Are Today

1-3 Year View – Heavy Lifting Work



- Iterate through all remaining center Program Areas.
- Begin yearly performance/health indicator review process.

4-5 Year View – Maintenance Work



- Fine tune yearly performance/health indicator review process.

STRATEGIC INTEGRATIONS TEAMS



ESHield Strategic Integrations

Support and manage interactions to identify where ES&H has IT and business process improvement opportunities (i.e., push/pull to Corporate or non-ES&H-owned IT solutions, coordination and consolidations of services, determination and management of integration ownership, etc.).

ES&H Roadmap for IT

Develop and IT Roadmap with a sustainable process for reviewing, revising and communicating status and changes to key stakeholders.

Formality of Relationships

To create and promulgate a process for identifying and formalizing integration points with ES&H internal and external customers and partners to enable efficient and effective operations and communications.

Multi-Vendor Experience (MVE)

Develop a strategy and implementation plan to address ES&H business, IT, and user needs of an integrated ESHield experience (User Interface, navigating, data) that includes multiple vendor COTS software products and/or platforms, and any related reporting, workflow or notification systems.

IT System Integration (Strategic)

Update ESHield existing and potential system interfaces.

Communications

Develop and implement strategic communications for ESHield.

Data Governance

Empower the treatment of enterprise data as a Sandia asset.

User Experience

Provide a consistent user experience across all vendor platforms.

TECHNICAL INTEGRATIONS TEAMS



EShield Technical Integrations

Coordinate, evaluate and implement technical interactions between internal ES&H functions and external organizations' Information Technology (tools owned by other corporate entities) for ES&H integration of IT.

Business/IT Integrated Schedule

Develop integrated schedule.

Records Management

Implement Records Management Process for projects (Document Management and Records Retention).

ES&H Toolbox for Business Strategic Teams

Implement toolbox for use by Business Strategic Initiative Teams.

User Experience

Provide an improved interface for end-users for individual projects.

Communications Initiative

Develop and implement communications strategies for individual projects.

Notifications

Implement Notifications Process for projects – identify what is and what needs to be part of notifications strategy.

Training Program

Develop and implement a training program.

IT System Integration (Technical)

Identify and document the IT integration points for each project.



COMMS

COMMUNICATIONS

Communications Goals:

Improve the perception and user satisfaction of the ESHield “Umbrella” and the products in it.

Key Messages:

- A consistent framework for app presentation, user information and tool access.
- Best-in-class applications in one easy-to-use location.
- Reduce and simplify work for every Sandia employee.

ESHield Website:

- ESHield.sandia.gov

Team formation: Communications is part of project team at inception.


Information gathering: Comms gathers info from Subject Matter Experts & others.

Sync: Comms and training synchronize on key messages and deliverables.

Comms plan: Plan developed, reviewed and finalized and includes key messages, communications channels and tactics.

Implementation: Generally early comms start about 60 days before launch, but can be earlier.



The slide features a central dark blue diamond shape with a white border, containing the text 'INFORMATION MANAGEMENT PROGRAM'. The background is light gray with a subtle dot pattern and diagonal lines in shades of blue and gray.

INFORMATION MANAGEMENT PROGRAM



FY25 Objectives: *Digital Journey*

1 Automate Updates to POC List on ES&H Website.

Create a standardized file structure for storage and easy access of ES&H records.

4

2 Release all ES&H Controlled Documents in software application.

Document current signature package process in AOP and identify/implement a streamlined future state.

5

3 Complete ES&H-wide Controlled Document Administrative Operating Procedures (AOPs) and Continuous Improvement of AOPs.

Identify and implement an efficient method of tracking activity-level work qualifications.

6

Develop and Implement Reporting Metrics.

7



COMPLIANCE
OBLIGATIONS
PROGRAM

COMPLIANCE OBLIGATIONS (CO)



1 Mature CO program development
(e.g., Revise Procedures)

2 Transition CO program lead
ownership

3 Build out compliance calendar and
linking program documents

Validate State compliance sources and
obligations **4**

Partner with the Unleashing Excellence
team in reviewing the ES&H Manual **5**





DIGITAL
JOURNEY
TEAM



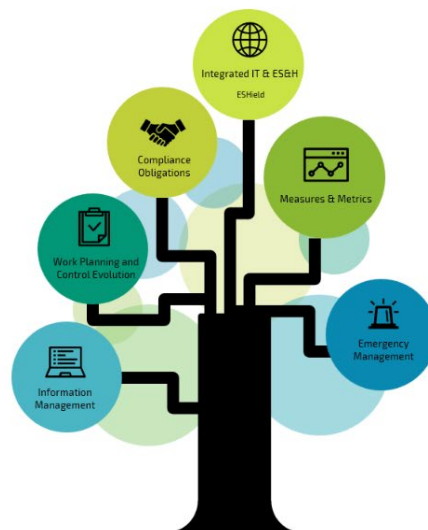
ES&H Digital Journey

Delivering Next Level Process Improvements

The ES&H Digital Journey is the process of modernizing operations by integrating digital technologies. This journey encompasses the evaluation and redesign of workflows, tools, and user interactions to enhance efficiency, optimize output, and elevate the overall user experience.

This page serves as an informational directory to learn about the initiatives, tools, and resources that play an integral role in ES&H's digital journey. Programs and initiatives that are part of this journey include:

- **Integrated IT & ES&H** - ESHield applications are helping Sandia's workforce meet ES&H management and compliance challenges.
- **Measures & Metrics** - The Measures & Metrics Initiative team is transforming data to monitor the health and performance of ES&H functional areas.
- **Information Management** - Information Management is digitally transforming their document control processes.
- **Work Planning & Control Evolution** - The WP&C Initiative team is enhancing how hazards and risks are identified, analyzed, and controlled.
- **Compliance Obligations** - The Compliance Obligations team is automating the management of thousands of prime contract-required compliance obligations.
- **Emergency Management** - WebEOC is advancing emergency operations.



Who We Are

Research and strategy focused subgroup assembled to support the execution of ES&H's Digital Journey.

What We Do

Our mission is to identify the current digital landscape of ES&H and develop and maintain a site that unites information efforts, programs, and resources.



**WORK
PLANNING &
CONTROL (WPC)
EVOLUTION**

WORK PLANNING & CONTROL (WPC) EVOLUTION



IT Solutions

- Primary Hazard and Aspect Survey (**PHAS**): Integrates environmental requirements into a single business process flow using one question set
- Work Planning and Control (**WPC**): Enables users to manage their work planning and control processes

Importance

- Operational Excellence: Enhances efficiency and safety across Labs
- Alignment with ES&H Goals: Improves hazard identification and minimizes process variation

Key Improvements

- Streamlined Processes: Consolidates multiple independent processes, reducing administrative burdens
- Enhanced Collaboration: Provides clear visibility for managers, work planners, and Subject Matter Experts, improving status tracking
- Proactive Risk Management: Flags inconsistencies and identifies hazards early
- Flexible and Centralized: Accommodates diverse needs with efficient document management
- Consistent Safety Standards: Standardizes safety cases and streamlines reviews

Upcoming

- Application Development: Currently in progress
- User Acceptance Testing: Feb-Mar 2025
- Pilot: Apr-Aug 2025
- Continuous Improvement: Incorporate feedback from User Acceptance Testing and Pilot (late 2025)
- Labs-wide Launch: Planned for 2026




EMERGENCY MANAGEMENT

EMERGENCY MANAGEMENT


WebEOC & Unified Command Platform (UCP) Software as a Service






mitigation | preparedness | response | recovery

WebEOC & Unified Command Platform (UCP)







WebEOC & Unified Command Platform

WebEOC & Unified Command Platform (UCP) is a web-enabled crisis information management system that provides real-time information sharing and situational awareness through an automated common operating picture (COP).




Highlights

-  **Dynamic**
WebEOC and UCP have the integrated **functionality of four legacy applications**, increasing efficiency and shrinking the IT footprint.
-  **Industry Standard**
The system is currently **used by 14 DOE sites**, with the plan for all sites to implement UCP (WebEOC Cloud) over the next 2 years.
-  **Interoperable**
Upon full implementation of UCP, **all DOE sites will be able to communicate via the same COP** with opportunities to team with local partners that use WebEOC/UCP.
-  **Secure**
WebEOC **operates on Sandia servers in a controlled environment** no higher than "CUI," while UCP is a cloud-based, FedRamp High application.

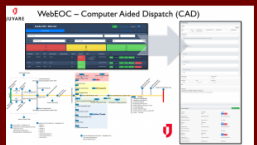


Resources

Watch how Sandia National Laboratories uses WebEOC and mapping for a COP



Feature Example Gallery

Click Images to Expand

- 
- 
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Starlink Operational Resilience

- Emergency Operations Center
- Emergency Response Vehicles

Metrics Consolidation

- Operations – NFPA Call Performance, Notifications, Volume, Fire Alarm monitoring, and Real-world Operational Emergencies
- Drills – Data capture/reporting requirements in alignment with DOE O 151.1E

Business Maturity Integrated Approach

- Service-Level Agreement – reaching back to the enterprise for critical 24/7 support
- Application Life-Cycle Management – Portfolio Rationalization and resilience

CLOSING REMARKS

SANDIA CONTACTS

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- Katiana Otero, ksotero@sandia.gov, (505) 933-3115





QUESTIONS

REFERENCES

- [1] J. Duggan, “Application Portfolio Triage: TIME for APM,” Gartner, Inc., Stamford, CT, USA, G00169227, August 5, 2009. Accessed on Mar. 21, 2024. [Online] Available: <https://www.gartner.com/doc/1115314>
- [2] P. Rucker, “Innovation Ambition Matrix,” The Rucker Group LLC, Cambridge, MA, USA, November 4, 2024. Accessed during Harvard Division of Continuing Education, Professional & Executive Development’s Leading Your Organization’s Digital Transformation course.

