



Human Performance Improvement Task Group
HPI Task Team Best Practice 22-03 HPI Messaging

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This Best Practice document provides an overview of Human Performance Improvement (HPI), a guide to HPI resources and examples of effective HPI messaging methods used in a variety of complex organizations. Human Performance is a set of behaviors and actions that are carried out to accomplish a specific task. Effective Human Performance Improvement efforts are most impactful when your organization focuses on detecting, preventing, and correcting errors.

This document provides topical examples of effective Human Performance Improvement (HPI) messaging methods used in a variety of complex organizations, serves as a guide to HPI resources, and provides an overview of HPI implementation, also known as Human Organizational Performance (HOP). Human Performance is a set of behaviors and actions that are carried out to accomplish a specific task. Effective Human Performance Improvement efforts are most impactful when your organization focuses on detecting, preventing, and correcting errors. Understanding the fundamental principles of HPI is the key to providing strong, consistent HPI messaging.

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DETECT → PREVENT → CORRECT

Detect, Prevent, Correct: Detecting latent organizational weaknesses, flawed defenses, and human performance errors play a crucial role in improving human performance. It requires observation of program strengths and having a reasonable threshold for capturing near misses and good catches. Preventing human error involves the preparedness of workers and the leadership team through effective HPI training. If you are trained on a potential hazard, you are far less likely to make errors when conducting operations in this area. Identification potential error precursors and utilizing effective error reduction tools can reduce the frequency and severity of errors. Correcting human error begins with thoughtful causal analysis and determination, followed by appropriate extent of condition analysis of effective corrections. The Department of Energy (DOE) has developed two HPI handbooks that provide detailed information related to HPI...

The Department of Energy (DOE) Standard for Human Performance Improvement (HPI) Handbook Volume 1: Concepts and Principles (DOE-HDBK-1028-2009) is an excellent resource for overall understanding. It describes Human Performance Improvement (HPI) as a series of concepts and principles associated with a model performance method. This illustrates the organizational context of human performance throughout the site.

The Department of Energy (DOE) Standard Human Performance Improvement (HPI) Handbook Volume 2: Human Performance Tools for Individuals, Work Teams, and Management (DOE-HDBK-1028-2009) provides a set of practical methods and techniques to improve the work force on their human performance. Understanding the fundamental principles of HPI is the key to providing strong, consistent HPI messaging.

Principles of Human Performance

1. People are fallible, and even the best people make mistakes.
2. Error-likely situations are predictable, manageable, and preventable.
3. Individual behavior is influenced by organizational processes and values
4. Events can be avoided by understanding the reasons mistakes occur and applying the lessons that were learned from past events.
5. People achieve high levels of performance largely from the encouragement and reinforcement received from leaders, peers, and subordinates.

Your organization must be committed to HPI. The following pages include a variety of practical HPI Messaging methods focused on improving human performance.

Nuclear Work Culture

Our *Nuclear Work Culture* is defined as core values and behaviors that result from our daily commitment to safety over schedule. Plant presidents, leaders, managers, and all working personnel ensure the protection of people and the environment by valuing safety and security above all else. Our HPI tools help us concentrate on improving disciplined operations and safety culture. It boils down to performing all work activities in a safe, disciplined manner.



Image Source: Savannah River Site (SRS)

New Demographic: Our workforce is turning over to a new generation. This presents a great opportunity to reinforce our safety practices. We must teach our new hires to detect, prevent, and correct human performance errors with a fresh determination. Every new pair of eyes is a great chance to welcome unique individuals to the safety culture, wherever they may work on the site. Present vital HPI tools to every pair of eyes, from fresh faces to our most experienced employees. Every single worker plays a valuable role in HPI.

Media: Posters, Cards, Slides

Visual or static media reaches people in a variety of ways. Use at work sites give employees information they can comprehend as they move about the site. It can help clarify communications and messages and work as reminders as they go about their work tasks. Savannah River Site has made a series of the following improvements over the recent past to refresh our commitment to HPI. These efforts included development of creative **Error Precursor** and **Error Reduction Tool** posters. These Posters were converted into lanyard cards for those in the field to easily reference. Both posters and lanyard cards have been popular tools onsite.” – *Daryl Smoldt, Cassie Sistare & Doug McKenzie (Savannah River Nuclear Solutions)*



Human Performance Improvement (HPI) Error Precursors	
Task Demands	Human Nature
Time pressure (in a hurry)	Stress (limits attention)
High workload (limited memory)	Habit patterns
Simultaneous, multiple tasks	Assumptions (inaccurate mental picture)
Repetitive actions, monotonous	Complacency/overconfidence
Irrecoverable acts	Mindset (tuned to see)
Interpretation requirement	Inaccurate risk perception (Pollyanna)
Unclear goals/roles/responsibilities	Mental shortcuts (biases)
Lack of or unclear standards	Limited short-term memory
Individual Capabilities	Work Environment
Unfamiliarity with task (first time)	Distractions/interruptions
Lack of knowledge (mental mode)	Changes/departure from routine
New technique not used before	Confusing displays or controls
Imprecise communication habits	Workarounds / OOS instruments
Lack of proficiency/inexperience	Hidden system response
Indistinct problem-solving skills	Unexpected equipment conditions
Hazardous attitude for critical task	Lack of alternative indication
Illness/fatigue	Personality conflicts

Human Performance Improvement Error Reduction Tools
Self-Checking: 2S Proc. 5.7 Self Check
Peer Checking: 2S Proc. 5.7 IV, SPV & Peer Check
Three-Way Communications: 2S Proc. 2.1 Verbal communication
Procedure Use and Adherence: 2S Proc. 1.3
Timeout: 8Q Proc. 1
Questioning Attitude: 2S Proc. 2.1 Job-Site Reviews, Situational Awareness
Phonetic Alphabet: 2S Proc. 2.1 Communications
Pre-job Briefing: 2S Proc. 2.1 Informal, formal, post-job reviews, critical steps
Place-keeping: 2S Proc. 1.3 procedure adherence
Task Preview: 2S Proc. 2.1 SAFER
Job-Site Review: 2S Proc. 2.1
Flagging: 2S Glossary

Image Source: Savannah River Site (SRS)

Error Precursors and Error Reduction Tools posters, along with lanyard cards, were developed using a team of both long-term and newly hired employees to ensure that the design would bridge across a broad range of site employees. Error Precursors can include anything from an excessive number of assignments given to a single employee, to a sense of complacency or overconfidence that employees may feel while conducting simple, repetitive tasks.

- Error Precursor and Error Reduction Tool posters were developed using a team of both long-term and newly hired employees to ensure that the design would bridge across a broad range of site employees.
- The first step is to ensure that you properly identify the error precursors that may impact your specific job. Then, by selecting the correct error reduction tools, you will greatly reduce the likelihood of committing an error.
- Error Precursors can include anything from an excessive number of assignments given to a single employee, to a sense of complacency or overconfidence that employees may feel while conducting simple and repetitive tasks.
- Error Reduction Tools guard against committing errors while working, such as Self-Checking, where one repeatedly verified the status and completion of an operation. Using your error reduction tools not only protects you from being exposed to damage and uncontained hazards, but you can protect the people all around you.

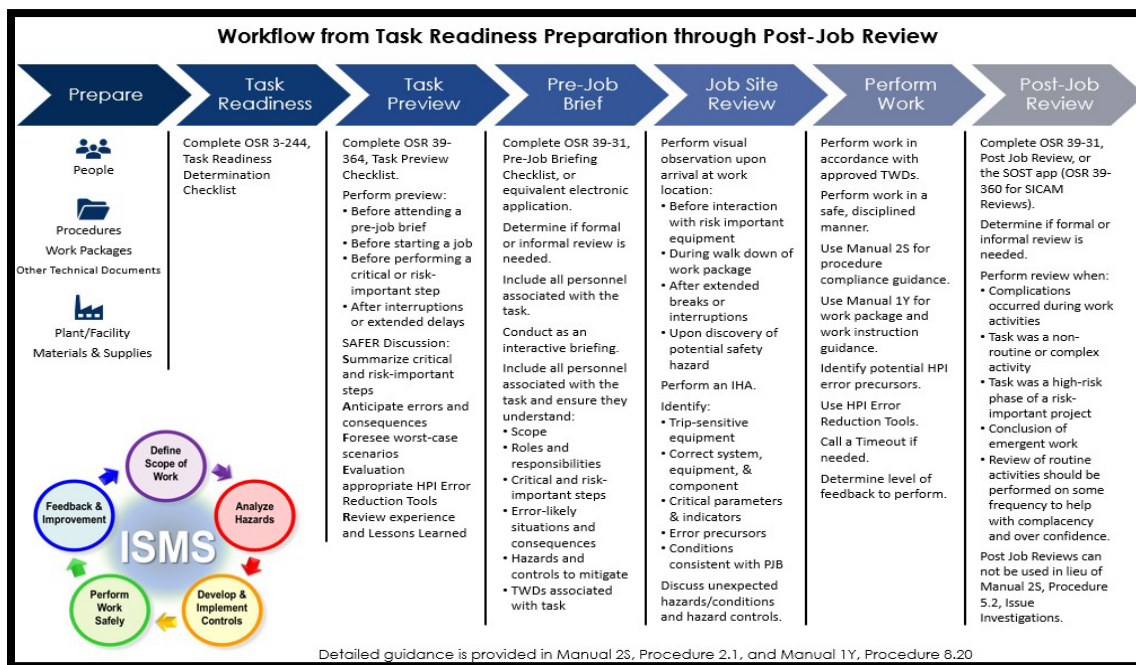


Image Source: SRS (Workflow)

Another poster developed at SRS was a Workflow Poster. This poster illustrates the numerous steps that must be completed prior to conducting operations. It also stresses the importance of finding latent organization weaknesses, flawed defenses, and potential error precursors as early in the workflow as possible.

Workflow Posters were developed to illustrate the importance of HPI from the planning stages of work to after the performance of work. This is done through Task Readiness, Task Preview, Pre-Job Briefing, and Job Site Reviews. Post-Job Reviews can be used to ensure the lessons learned improve future performance. Both Pre-Jobs and Post-Jobs require a graded approach.

“Argonne National Laboratory (ANL) uses the two-minute drill, providing lanyard cards to all workers, to be used as a guide for workers to take a couple minutes directly before the start of any task to make sure everything is in place to perform work safely.”

■ [Paula Pallan](#)
Argonne National Lab

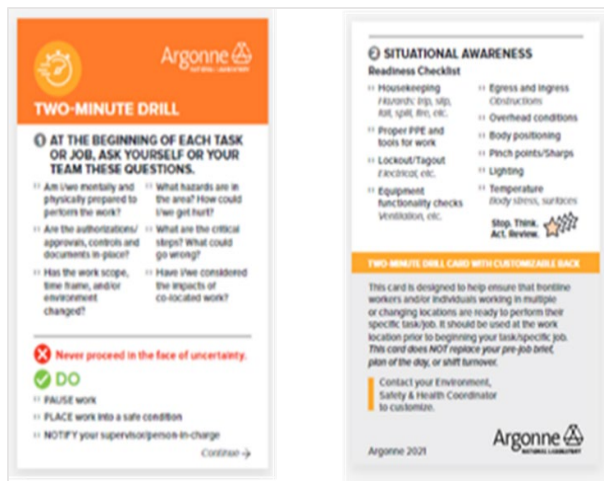


Image Source: Argonne National Laboratory (ANL)

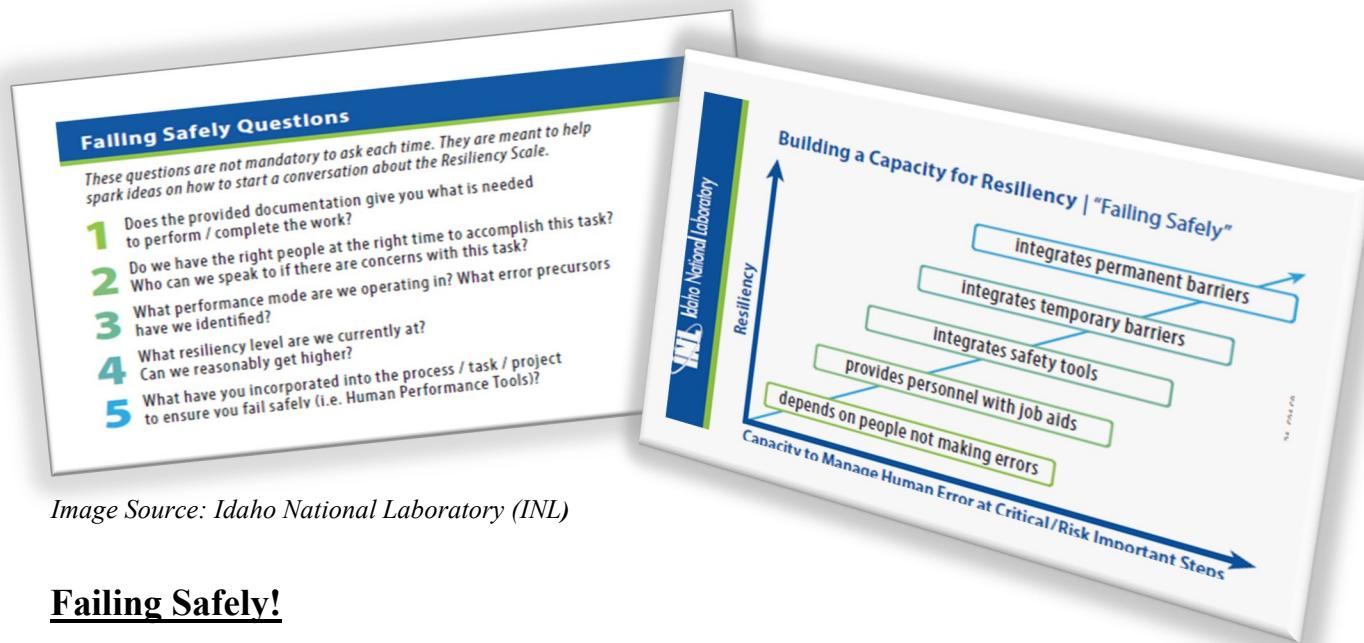


Image Source: Idaho National Laboratory (INL)

Failing Safely!

Brandy Young (Idaho National Lab)

Integrated Resiliency Question Into Task Hazard Preview Tool:

The Behavior-Based Safety tool that is used at INL has integrated the following question in the Task Hazard preview tool: Failing Safely!

Failing Safely - If an error was made do we have the ability to fail safely? *

Does Not Meet Expectations

Meets Expectations

This question aligns with the ‘Failing Safely’ approach used for HPI that is based on the Resiliency Scale that was developed.

HPI Champion Card

In one of our HPI trainings the participants receive an HPI Champion card upon completion to attach to their lanyard. These cards help start discussions regarding resilience and HPI.

Error Reduction Media: Integrated Safety Management Systems (ISMS)

“The Idaho Environmental Coalition has completed a series of engaging posters that encourage use of HPI tools and provide helpful guides on error precursors!” – Trish Hughes (IEC)

HPI Error Reduction Tools

HPI - Human Performance Improvement

- Self-Checking
- Task Preview and Job-Site Review
- Peer Checking
- Pre-Job Briefing
- Step Back
- Questioning Attitude
- Phonetic Alphabet
A - ALPHA
B - BRAVO
C - CHARLIE
- Three-Way Communication
- Procedure Use and Adherence
- Place-Keeping
- Flagging
- Post Job Brief
- Situational Awareness

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ISMS with HPI Error Reduction Tools

ISMS: Integrated Safety Management System
HPI: Human Performance Improvement

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Safely delivering the Idaho Cleanup Project

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CONOPS / MAINTENANCE / HOISTING & RIGGING SMP MONTHLY BULLETIN-APRIL 2022

Culture of Caring: Another trait of a healthy nuclear safety culture is “personal accountability”. All individuals take personal responsibility for safety and ConOps implementation. Individuals understand the importance of adherence to nuclear standards. All levels of the organization exercise accountability for shortfalls in meeting these standards. Behavior examples include:

- Individuals encourage each other to adhere to high standards
- Individuals demonstrate a proper focus on nuclear safety and ConOps implementation and reinforce this focus through peer checking, coaching and discussions
- Individuals hold themselves personally accountable for modeling nuclear safety behaviors and are open to feedback

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HPI Toolbox:

We've added a new tool to the toolbox! Many of you are familiar with the ICP Pocket Safety Guide, a new guide is on the way to help you with your Conduct of Operations implementation!

The ICP Conduct of Operations Pocket Guide (GDE-981) can be found on EDMS and will be distributed throughout your work areas in the near future! A new tile will also be available so you can have this handy reference on your ICP Home Page.

Human Performance Improvement (HPI):
Let's look back at some recent events and consider what we could have done better or what HPI Tools could have been used to prevent the event:

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Error Precursors (short list)

<p>Task Demands</p> <ul style="list-style-type: none"> <input type="checkbox"/> Time pressure (in a hurry) <input type="checkbox"/> High workload (memory requirements) <input type="checkbox"/> Simultaneous, multiple tasks <input type="checkbox"/> Repetitive actions, monotonous <input type="checkbox"/> Inrecoverable acts <input type="checkbox"/> Interpretation requirements <input type="checkbox"/> Unclear goals, roles, & responsibilities <input type="checkbox"/> Lack of or unclear standards <p>Work Environment</p> <ul style="list-style-type: none"> <input type="checkbox"/> Distractions / Interruptions <input type="checkbox"/> Changes / Departures from routine <input type="checkbox"/> Confusing displays or controls <input type="checkbox"/> Work-arounds / OOS instruments <input type="checkbox"/> Hidden system response <input type="checkbox"/> Unexpected equipment conditions <input type="checkbox"/> Lack of alternative indication 	<p>Individual Capabilities</p> <ul style="list-style-type: none"> <input type="checkbox"/> Unfamiliarity with task / First time <input type="checkbox"/> Lack of knowledge (mental model) <input type="checkbox"/> New technique not used before <input type="checkbox"/> Imprecise communication habits <input type="checkbox"/> Lack of proficiency / Inexperience <input type="checkbox"/> Indistinct problem-solving skills <input type="checkbox"/> "Hazardous" attitude for crucial task <input type="checkbox"/> Illness or Fatigue <p>Human Nature</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stress (limits attention) <input type="checkbox"/> Habit patterns <input type="checkbox"/> Assumptions (inaccurate mental picture) <input type="checkbox"/> Complacency / Overconfidence <input type="checkbox"/> Mind set ("tuned" to see) <input type="checkbox"/> Inaccurate risk perception (Pollyanna) <input type="checkbox"/> Mental shortcuts (biases)
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HUMAN PERFORMANCE TOOLS

The Human Performance Tool Box

There are 14 tools in your basic HU toolbox:

1. Pre-Job Briefing
2. Two-Minute Rule
3. Three-Way Communication
4. Phonetic Alphabet
5. Procedure Use & Adherence
6. Place Keeping
7. Flagging/Operational Barriers
8. Self-Checking
9. Independent Verification
10. Concurrent Verification
11. First Check
12. STOP When Unsure
13. Peer Checking
14. Post Job Review

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Media: Webpages, Videos & Documents

Electronic or digital media provides an alternate method to ‘print’ media. This allows for a quicker transmission of the information, usually at a lower cost, and provides another opportunity to connect with the employees to create alertness and awareness.

SRS has a dedicated HPI website to ensure a sitewide, consistent message of human performance improvement. Through our dedicated HPI labs and many CONOPs minutes, we can bridge the gap between Conduct of Operations and Human Performance Improvement.

Media such as **HPI Minutes** and our **CONOPs SharePoint** have been carefully crafted for site-wide distribution. These resources provide insight on the 2S Manual and our fundamental HPI principles in “bite-sized” portions that are easy to gather for quick reference.

Conduct of Operations

Home

25 Committee Meetings

Recycle bin

Edit

New Send to Page details Analytics

Published 7/26/2022 Edit

Error Reduction Tools Resources & References Human Performance Improvement

Introduction

This Conduct of Operations Manual, Manual 2S, has been written to establish standards that are used by the Performing Entities at the Savannah River Site. These standards comply with the requirements of Department of Energy (DOE) Order 422.1, Conduct of Operations (all 2S Manual Procedures).

Operating in accordance with these standards is a fundamental requirement for the safety of employees, the public and facilities. Compliance with these standards provides defense-in-depth against many kinds of accidents and adverse incidents by minimizing error and confusion and by providing clear means to identify problems, determine underlying causes, take preventive action before adverse events occur, and bring about continuous improvement in the quality and safety of operations.

The 2S manual is the single Site level document which lists the Conduct of Operations requirements for each program and facility. Therefore, no other procedures or programs for conduct of operations are authorized unless approved via the process described in Section 6.0 of this manual. Where this manual conflicts with other site-level procedures with respect to conduct of operations as described in DOE O 422.1, this manual will take precedence until such time as the conflicts are resolved.

Our Mission

Reinforce and improve the attributes and behaviors that exemplify excellence in the conduct of operations.

Human Performance Improvement

Home

HPI Working Group

Strategic Documents

HPI Tool Guides

Resources

Recycle bin

Operational Excellence

Conduct of Operations Homepage Resources

IMPROVEMENT

See all

News

LSIT Leadership Day

June 29, 2022 The SRNS Environmental, Safety, Health and Quality (ESH&Q) division recently held a Local Safety Improvement Team (LSIT) Leadership Day. All 23 SRNS LSITs participated, as well as LSITs from Savannah River Mission Completion and...

Savannah River Nuclear Solutions Summer Interns and Year-Long Apprentices Help Fill Job Pipeline

July 13, 2021 Dozens of year-round Savannah River Nuclear (SRNS) Solutions student interns have been reclassified as apprentices at the Savannah River Site. This change has...

SRS Strengthens Use of HPI Tools to Aid in Human Error Reduction

June 1, 2021 AIKEN, S.C. (June 1, 2021) – The Savannah River Site (SRS) has recently taken steps to strengthen the use of Human Performance Improvement (HPI) error reduction...

Human Performance Improvement Task Team – EFCOG.org

Upcoming Events. Monthly meetings. HPI Task Team monthly meeting, 4th Thursday of each month at 12 noon Eastern. Please use the contact form at the bottom of the...

– Daryl Smoldt, Cassie Sistare & Doug McKenzie

“As part of Argonne National Laboratory’s Work Planning and Control (WPC) Program, Argonne has integrated HPI skills and their applicability to Integrated Safety Management (ISM) in the WPC process and training by developing digital tools that include videos and HPI in Action Microlearning trainings.” – *ANL WPC Program Office WPC Intranet Webpage*

Image Source: Argonne National Laboratory (ANL) & WPC Intranet Webpage

➤ “We have also incorporated these valuable resources into the Argonne mobile app! The Argonne mobile app provides employees a method to get information quickly and keeps them connected to the lab. It is designed with the needs of lab employees in mind and is a timely communication tool for those working remotely or on-site.”

– *Paula Pallan, Argonne National Laboratory*



“The Fermi National Accelerator Lab has developed a dedicated HPI webpage, two highly interactive HPI courses, and conducts reviews integrating HPI Principles that are required for specific events.” – *Dave Baird*

“INL employees have access to our HPI website that includes links to documents, videos, and HPI Plans from different Directorates. We are also creating ‘HPI Shares’ in conjunction with our Lessons Learned program.” – *Brandy Young*

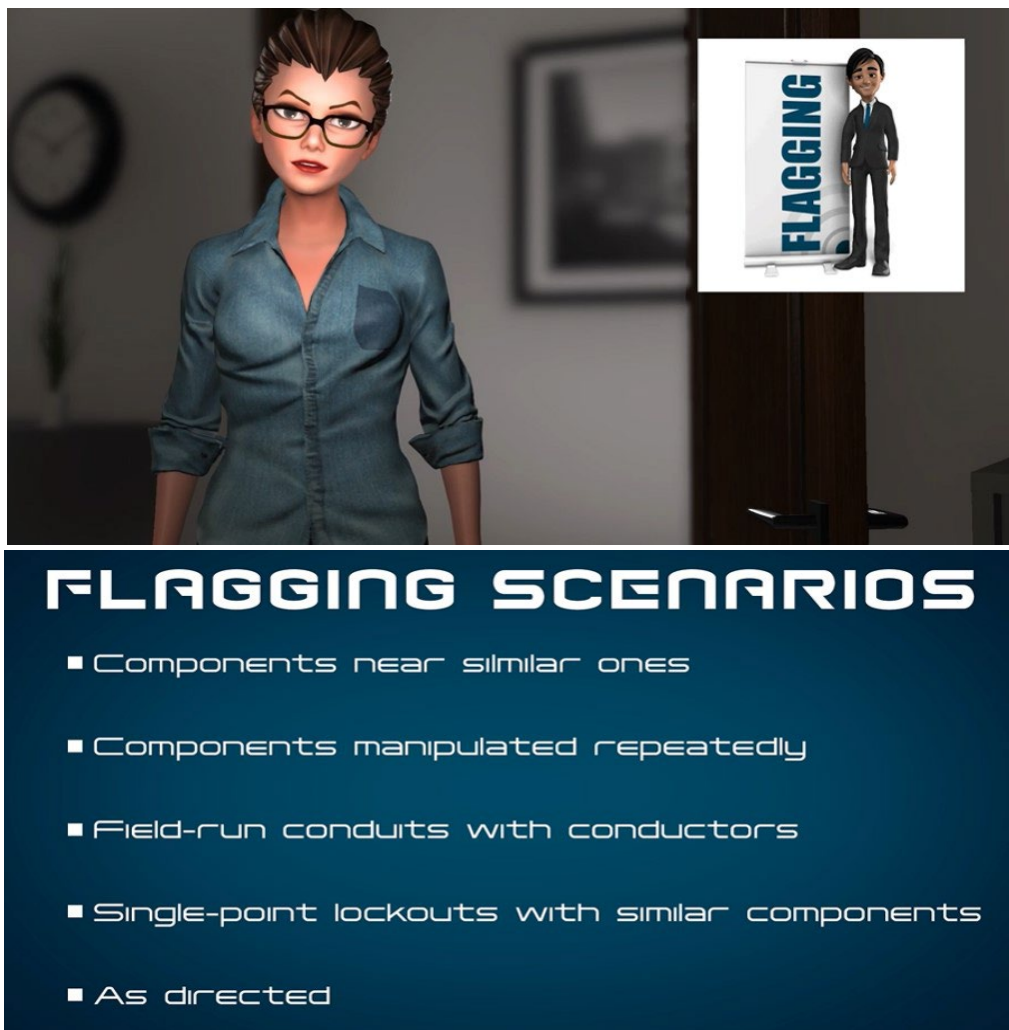
“The Los Alamos National Lab has an HPI drop down on our homepage. We developed subpages (Learning Teams, HPI Tools, Training, Workshops), provided videos, started working with the Communications Organization, learned how to share news articles with other sites, and developed a video to assist in learning Microsoft Teams!” -*Mike Petrowski*

“The Idaho Cleanup Project has a Company Webpage. ICP has revised their HPI General Training Lesson Plan 0ICP1309 Rev 04 based on employee feedback of previously presented classes in the past year. As part of ICP’s 2022 ISMS goals, the HPI SME and Training department will review HPI-100DE, HPI Fundamentals for Performance and Reliability online training from the NTC LMS to determine if the course can be used as an online option to 0ICP1309 Rev 04. ICP has several new or revised ISMS and HPI posters that have been posted in the work areas and are available on the HPI homepage. ICP also has several Error Precursor and 5 Critical Steps Cards available to the employees and on the HPI homepage! The card below was developed as a result of one of the HPI EFCOG tasks from the previous year. It was made available to Supervisors as a tool to prompt detailed discussion on Error Likely Situations.” – *Trish Hughes*

Enhanced Error Precursor Questions		
Date: _____ Job Supervisor: _____		
Activity Type: Maintenance or Operations (circle one) The purpose of this tool is to encourage pre-job discussions with a goal of enhancing safety awareness and precision in the performance of work. These questions can be used to augment the pre-job brief checklist (Form 434.14) discussions and participation by the work group. Each question has a corresponding pre-job checklist question. The Conduct of Operations/Maintenance Center of Excellence will review these questions quarterly for update to current workplace experience. Comments and feedback are encouraged to support the quarterly review and can be submitted to COE meetings. Please return completed cards to Marty Bartholomei MS 9205		
QUESTION and corresponding Form 434.14 item #	PRECURSOR	Comments or Feedback
1. Under what conditions should you pause/stop work? (Corresponds with 434.14 question 7)	Task Demands - Interpretation requirements	
2. What potential interruptions or distractions might arise during execution of this task? • How would you handle distractions during this task? • Is there anything else going on in this [work] area that could interrupt or delay us? (Corresponds with 434.14 question 13 Steps 1 & 3)	Work Environment – Distractions / Interruptions	
3. What is different today from our usual routine, or is there anything new about how we are to perform this job? (Corresponds with 434.14 question 13 Steps 1, 3 or 4)	Work Environment – Changes / Departure from routine Individual Capabilities – New techniques not used before	
4. Are there any situations going on with the work team that can affect the deliverable, or aspects of the job or potential obstacles that could cause misunderstanding between team members? (Corresponds with 434.14 question 13 Steps 1 & 3)	Work Environment – Personality conflict Individual Capabilities Imprecise communication habits	
5. What must go right the first time and/or every time – in other words, are there critical steps or risk-important steps? (Corresponds with 434.14 question 13 Step 2)	Individual Capabilities – Unfamiliarity with task / First time	
6. What do we “expect” to see, or do as we begin work and/or as task performance progresses? How will we validate this is the actual condition? (Corresponds with 434.14 question 13 Steps 1 & 2)	Individual Capabilities – Lack of knowledge (faulty mental model)	
7. Are there any lessons learned from previous experiences doing similar work that can be discussed and utilized to ensure safe completion of the job scope? (Corresponds with 434.14 question 12 Step 5)	Human Nature – Mind set (“tuned” to see)	
8. Even though we have performed this task a bunch of times before, is there some reason we should do some aspect/part of it differently this time? (Corresponds with 434.14 question 13 Step 1)	Individual Capabilities – Lack of knowledge (mental mode) Human Nature - Habit patterns	

“Lawrence Berkeley National Lab developed PTHA Pre-Task Hazard Analysis Checklist for contractors that include risk level considerations and Error Precursors. We are currently developing a Human Performance Strategy Document. We will also implement a community of practice group, HPI advocates to create a website!” – *James Newman*

“Savannah River Mission Completion has implemented an additional HPI Tool known as “Flagging” where HPI workers on the field learn how to flag certain materials that need to be inspected or worked on before their routine usage. **Flagging was a specific response** to improve our place-keeping efforts.” – *Juanita Boddiford*



“We are also in the process of creating HPI signs to display in various facilities and a lanyard card to hand out before shifts. We also have case studies included on the SRMC webpage. These are also an effective way to communicate HPI tools.” – *Juanita Boddiford (SRMC)*

“The Lawrence Berkeley National Laboratory is preparing to work with their facilities group in an effort to determine the **M.E.L.T. (Most Error Likely Task)**, workers perform and ensure adequate controls are in place to prevent these from becoming issues. From then on, we can determine the correct approach in correcting and preventing said errors and events (DLAs, HuPerT Training, etc.)” – *James Newman (Lawrence Berkley National Laboratory)*

Training: DLAs, Programs, Interactive Courses

Our site is dedicated to the best training for our associates. This includes interactive lesson plans and what is known as a Dynamic Learning Activity (DLA). DLAs have been introduced to provide practical situations that support human performance improvement. The purpose of a Dynamic Learning Activity (DLA) is to provide an opportunity for workers to use their skills and knowledge while performing tasks/activities in a simulated environment.

A Dynamic Learning Activity has four parts:

- Preparation
- Facilitator Introduction / Pre-Activity Briefing
- Activity
- Post-Activity Discussion



We show our dedication through the steps we’ve taken to implement HPI principles of safety and security into our daily work and practices. Each facility has come together for the construction of training programs, DLAs, videos, and more. We do so in the following ways:

Savannah River Nuclear Solutions - *Daryl Smoldt, Cassie Sistare & Douglas Mackenzie*

- DLA Training
- CONOPs Minutes and “CONOPs” Webpage
- “How to Write a DLA” and “How to Create DLA Binders”
- Support Dynamic Learning Activities (DLAs) with Savannah River Site

Savannah River Mission Completion - *Juanita Boddiford*

- Management Linked in Learning to improve leadership skills.
- DLA Training to improve worker performance and application.
- Support Dynamic Learning Activities (DLAs) with Savannah River Site.
- SRMC utilizes the lanyards cards and has created medal stanchions in the facility displaying the posters.

Fermi National Accelerator Lab - *Dave Baird*

- Conduct reviews using HPI Principles for the following events:
 - Injuries/Illnesses
 - Days Away, Restricted or Transferred (DART)
 - Total Recordable Cases (TRC-Not DART)
 - Incidents: Near Misses/Unexpected Outcomes
 - ORPS: High/Low/Informational
- Place reviews with HPI Principles into an HPI database. The HPI database provides a review framework that is designed to facilitate the review, and to identify the causes behind issues and the associated human performance factors. The HPI database also captures the corrective and preventive actions from the event. The data from the reviews are analyzed to foster the development of directed lab-wide programmatic initiatives to address the identified gaps in our work culture.
- Much of the HPI work at Fermilab happens through the HPI subcommittee (HPIS), which is made up of representatives from each Division and Section. The HPIS exists to strengthen areas where the lab has organizational weaknesses, reduce top error precursors, and actively address recommendations from HPI reviews and implement lessons learned. Its goals are to integrate HPI principles into the lab’s processes and work activities, create a data-driven culture and develop a mindset that’s more preventive than reactive.
- Created an Analysis Summary Report of reviews using HPI Principles. Socialized report to Divisions and Sections, and other HPIS Fermilab entities:
 - Developed action items and lab-wide initiatives to address the drivers and common root causes of the Top 5 Error Precursors, Latent Organizational Weaknesses, and Causal Codes as well as other common themes.

- Developed HPI article series that are published with the assistance from the Fermilab Communications Office.
- Developing a lead review training course for employees who will serve as a lead, lead-in-training, or mentor of reviews integrating HPI.

Argonne National Lab - Paula Pallan

- Integrating HPI into our WPC process and training, into our safety tools and messaging.
- Implementing the use of artificial intelligence to review applicable lessons learned to work control documents improving on how to do work better and safely.
- Transitioned “fact findings” into “debriefings” improving discussions of an event occurrence and facilitating open communications. Debriefings and/or operational safety reviews are valuable for documenting best practices and evaluating technical issues, safety management systems, human performance, and environmental conditions to prevent accidents through a process of continuous learning.

Lawrence Berkeley National Lab - James Newman

- Recently hired a new HP Program Manager position.
- https://drive.google.com/file/d/1RE_MDdE6yUMFXg-NSzmKvI0mloOQrfBQ/view
- Meetings facilitated by the HP Program Manager have started with the mission to clarify electrical specs for inhouse and contractor/subcontractor support.
- The Lab Safety Subcommittee that reports to the Safety Advisory Committee is temporarily chaired by the HP Program Manager with efforts to improve lab safety.
- Approval to implement training; for certain groups for two-, four-, or eight-hour sessions. These are in person. In early stages, participants will be working with group to create and edit content to ensure it is tailored to the correct audience. At the end of training, we will also provide homework for participants.
- Interviewing facility operations workers to see where they’re most likely to commit an error by using the MELT system.

Idaho National Lab -Brandy Young

- *Resiliency in Virtual Safety Meetings:* Almost every week there is a Virtual Safety meeting held on Microsoft Teams that is open to all INL employees. The moderators consistently try to tie in HPI and resiliency messages when appropriate.
- *Weekly HPI Message:* The Safeguards & Security group are sent a weekly HPI email.
- *HPI Champion Cards:* In one of our HPI trainings the participants receive an HPI Champion card upon completion to attach to their lanyard. Idaho has added flare with new colors to their HPI tools.
- *Mission Area Specific Pocket Guide:* One of the mission areas at INL created an HPI pocket guide for workers at that location.

- Monthly HPI Working Group Meetings: Every month a 1-hour HPI Working Group meeting is held comprising of the HPI Academy Core team, HPI Leads, HPI Practitioners, DOE Reps, and those designated by management to attend.
- Bi-weekly HPI Lead meetings: Every other week the HPI Core team and HPI Leads meet to discuss any updates, ongoing HPI Reviews, and any action items to take to their area.
- Quarterly HPI Meetings with Cause Analysts: Each quarter a meeting is held by the HPI Academy team for INL's Cause Analysts, Critique Leaders, and anyone from the HPI Working Group that wants to join.
- HPI Sub-Teams: Ten HPI sub teams have been created to address the integration of HPI across INL. These sub teams report their status at our HPI Leads meetings that are held every other week as well as giving updates to the HPI Working Group. The ten sub teams cover: HPI Coaching, Feedback, HPI for Knowledge Workers, HPI LabWay Screening, HPI Learning, Metrics, Continual Education Topics, Shares, Pre-Job Briefings, and Proactive Strategies.

Los Alamos National Lab -Mike Petrowski

- Utilized an HPI drop down on main homepage.
- Developed subpages (Learning Teams, HPI Tools, Training, Workshops)
- Working with the Communications Organization
- Learned how to share news articles with other sites.
- Created a video to assist in learning Microsoft Teams.

Idaho Environmental Coalition (Cleanup Project) -Trish Hughes

- Created an "HPI Crosswalk" training tool for workers to reference.
- ICP HPI homepage has various training available.
- One contains a refresher on the HPI tools called HPI Toolbox, for easy reference.
- We are using our HPI Community of Practice and using some of the weekly HPI messages from INL and using them as safety shares and as part of our IEC CONOPs COEs and their monthly CONOPs bulletins.
- As mentioned in the introduction this document provides HPI resources and examples of effective HPI messaging methods used in a variety of complex organizations. During the completion of this task the sharing of these effective communication tools resulted in the use and adaption of those tools and messaging at another site. The following are examples of how the ICP site utilized the communication tools and messaging of other team members and tailored them to their site needs.
- The SRS posters above were shared and tailored to fit the ICP needs. The weekly HPI messages provided by the INL site are now shared with the ICP site. The ICP site has made the HPI messages available on their ICP HPI homepage, through employee safety teams, and as part of the Conduct of Operations integration. The ICP site's monthly CONOPs bulletin highlights HPI tools and one of the HPI messages each month.

References

If you have any questions regarding the content of this document, please contact:

- Savannah River Site HPI Chairperson Daryl Smoldt @ (803-761-2738)
- Savannah River Site HPI Working Group Member Cassie Sistare @ (803-679-0080)

Or visit EFCOG.org <https://efcog.org/>

- Working Groups / Safety / Integrated Safety Management Subgroup
- Human Performance Improvement Task Team
- Learning and Reference Materials / HPI Labs and DLAs

Also refer to the DOE Handbooks

- DOE-HDBK-1028-2009 Human Performance Improvement Handbook Volume 1: *Concepts and Principles* <https://www.standards.doe.gov/standards-documents/1000/1028-BHdbk-2009-v1> (links to both volumes)
- DOE-HDBK-1028-2009 Human Performance Improvement Handbook Volume 2: *Human Performance Tools for Individuals, Work Teams, and Management*