POWER GENERATION VPP WORK GROUP

Q3, 2025

August 7, 2025

Please check in on the chat function with your name, title and company. Feel free to add email

Safety Moment

Presented By:

Mark Miranda

EHS Manager

Hanging Rock Plant

BEST DEFENSE

Everyone wins. No one gets hurt.

VPP Updates

Since last meeting:

New VPP Applications Submitted or Accepted

Initial VPP Approvals

VPP Reapprovals

Special Government Employees (SGE)

Training and Opportunities

- 2 SGE training classes are scheduled through October of 2025. https://www.osha.gov/sge/sge-training
- SGE Opportunities – https://www.osha.gov/sge/onsite
- For more SGE Program Information - https://www.osha.gov/sge

VPP Element

Internal Audits
NorthWestern Energy
Trevin Anderson, CSP, CUSP – Manager Safety

Internal Audits

NorthWestern Energy

Trevin Anderson, CSP, CUSP – Manager Safety

Agenda

- Overview
- Quarterly Site Walkdowns
- Internal Comprehensive VPP Audit
- Safety Committee Walkdowns
- Auditor Training
- Best Practices

Overview

There are several reasons to have an internal audit process as an organization.

- Demonstrates a proactive safety culture
- Supports VPP readiness and maintenance
- Drives continuous improvement
- Engages employees and reinforces accountability
- Validates management commitment

NorthWestern Energy uses several different types of internal audits throughout the year and VPP recertification cycle.

- Quarterly Walkdowns
- Internal VPP Audits
- Safety Committee Walkdowns

Quarterly Site Walkdowns

Quarterly site walkdowns are performed by crew members at the individual locations.

Checklists have been tailored to each site and specific areas and or unique hazards that may be present.

Crew members create a log of all deficiencies found.

- Deficiency is tagged with a description of what the deficiency is written on the tag. That tag is hung close to the deficiency.
- All deficiencies are tracked on an actin log during the walkdown
- After the walkdown the action log is sent to the office manager for entry into the company corrective action tracking system

Walkdowns are designed to be a higher-level facility audit to catch common issues such as:

- Flammable storage
- Electrical
- Signage

Quarterly Site Walkdowns

NorthWestern Energy	Site Safety Inspection	
	Black Eagle	Created: 3/08/22 Revised: 7/15/2024

QQInspection Team Member(s):

Area #1: Upper Garage, Lower Garage, Parking Lots **Date Inspected:**

Yes	No	N/A	
☐	☐	☐	1.1. Are racks and hooks appropriately labeled and not overloaded?
☐	☐	☐	1.2. Tools and equipment in safe operating condition?
☐	☐	☐	1.3. Tool/equipment guarding in place?
☐	☐	☐	1.4. Flammables stored in appropriate cabinets and not left out in open?
☐	☐	☐	1.5. Chemicals appropriately labeled? (secondary container)
☐	☐	☐	1.6. Electrical Panels appropriately labeled, closed?
☐	☐	☐	1.7. Extension cords not used as permanent wiring and ran overhead wherever possible?
☐	☐	☐	1.8. Lighting appropriate and sufficient?
☐	☐	☐	1.9. Appropriate fire protection in place? (extinguishers, fire blanket, etc...)
☐	☐	☐	1.10. Overhead doors had annual maintenance completed?
☐	☐	☐	1.11. Biological hazards present? (rodent / pest feces)
☐	☐	☐	1.12. Tripping hazards present in area?
☐	☐	☐	1.13. Walkways/paths clear of obstructions?

Area #2: Top of Dam, Forebay, Stop log Shed, Cherry Picker Shed, Wastegate Power Shed
Date Inspected:

Yes	No	N/A	
☐	☐	☐	2.1. Fence/doors/guarding in good condition and will prevent unwanted access to facilities and equipment?
☐	☐	☐	2.2. All guardrail/handrail in good condition and up to standard?
☐	☐	☐	2.3. Electrical conduit and boxes capped, knockouts in place?
☐	☐	☐	2.4. Walkways in good condition, free of tripping hazards?
☐	☐	☐	2.5. Stairs and stairway in good condition and free of trip hazards?
☐	☐	☐	2.6. Any identified "imminent" falling rocks near the roadways or facilities?
☐	☐	☐	2.7. Electrical Panels appropriately labeled, closed?
☐	☐	☐	2.8. Are racks and hooks appropriately labeled and not overloaded?
☐	☐	☐	2.9. Lighting appropriate and sufficient?
☐	☐	☐	2.10. Appropriate fire protection in place? (extinguishers, fire blanket, etc...)
☐	☐	☐	2.11. Overhead doors had annual maintenance completed?

Area #3: Powerhouse Generator Floor, Shop, Control Room, Office **Date Inspected:**

Yes	No	N/A	
☐	☐	☐	3.1. Generator equipment guarding in place and in good condition?
☐	☐	☐	3.2. Special PPE available and in good condition? (arc flash suit, battery testing PPE, etc...)
☐	☐	☐	3.3. Spill containment in good condition in storage rooms/areas?
☐	☐	☐	3.4. Secondary container labeling in place?
☐	☐	☐	3.5. All guardrail/handrail and stairways in good condition and up to standard?
☐	☐	☐	3.6. Area free from slip, trip, or fall hazards?
☐	☐	☐	3.7. Water not present near high voltage equipment?
☐	☐	☐	3.8. Are racks and hooks appropriately labeled and not overloaded?
☐	☐	☐	3.9. Tools and equipment in safe operating condition?
☐	☐	☐	3.10. Tool/equipment guarding in place?
☐	☐	☐	3.11. Flammables stored in appropriate cabinets and not left out in open?
☐	☐	☐	3.12. Chemicals appropriately labeled? (secondary container)
☐	☐	☐	3.13. Electrical Panels appropriately labeled, closed?
☐	☐	☐	3.14. Extension cords not used as permanent wiring and ran overhead wherever possible?
☐	☐	☐	3.15. Lighting appropriate and sufficient?
☐	☐	☐	3.16. Appropriate fire protection in place? (extinguishers, fire blanket, etc...)
☐	☐	☐	3.17. Area is tidy, clean and everything stored where it goes?
☐	☐	☐	3.18. Biological hazards present? (rodent / pest feces)

NorthWestern Energy	Site Safety Inspection	
	Black Eagle	Created: 3/08/22 Revised: 7/15/2024

Area #4: Turbine Floor, Battery Backup, Switchgear Room **Date Inspected:**

Yes	No	N/A	
☐	☐	☐	4.1. Generator equipment guarding in place and in good condition?
☐	☐	☐	4.2. Special PPE available and in good condition? (arc flash suit, battery testing PPE, etc...)
☐	☐	☐	4.3. Spill containment in good condition in storage rooms/areas?
☐	☐	☐	4.4. Secondary container labeling in place?
☐	☐	☐	4.5. All guardrail/handrail and stairways in good condition and up to standard?
☐	☐	☐	4.6. Area free from slip, trip, or fall hazards?
☐	☐	☐	4.7. Water not present near high voltage equipment?
☐	☐	☐	4.8. Are racks and hooks appropriately labeled and not overloaded?
☐	☐	☐	4.9. Tools and equipment in safe operating condition?
☐	☐	☐	4.10. Tool/equipment guarding in place?
☐	☐	☐	4.11. Flammables stored in appropriate cabinets and not left out in open?
☐	☐	☐	4.12. Chemicals appropriately labeled? (secondary container)
☐	☐	☐	4.13. Electrical Panels appropriately labeled, closed?
☐	☐	☐	4.14. Extension cords not used as permanent wiring and ran overhead wherever possible?
☐	☐	☐	4.15. Lighting appropriate and sufficient?
☐	☐	☐	4.16. Appropriate fire protection in place? (extinguishers, fire blanket, etc...)
☐	☐	☐	4.17. Area is tidy, clean and everything stored where it goes?
☐	☐	☐	4.18. Biological hazards present? (rodent / pest feces)

Area #5: General **Date Inspected:**

Yes	No	N/A	
☐	☐	☐	5.1. Confined space labeling in good condition?
☐	☐	☐	5.2. Confined space entry air monitors in good operating condition, monthly calibration, cal. gas good?
☐	☐	☐	5.3. Active LOTO boundaries in good condition? (energy released/mitigate, tags in place, equipment locked)
☐	☐	☐	5.4. Electrical hazards appropriately identified? (Danger High Voltage, 3' jump-back, etc)
☐	☐	☐	5.5. Safety Equipment Checklist Maintained/On-Track?
☐	☐	☐	5.6. Overall general housekeeping following the 5S Program?

Notes and Corrective/Preventive Actions Needed:
Record all findings in sheet below:

1. Record item tag number (Tag No.)
2. Brief description of deficiency
3. Required action(s) to correct deficiency
4. Record items Status:
   - AR = Action Required; C = Corrected (during Inspection); NA = No Action

Once completed send your form to your respective administrator for entry into NCATS

Tag No.	Deficiency	Action	Status

Internal Comprehensive Audit

Internal comprehensive audits are utilized to prepare for an upcoming VPP recertification.

These audits traditionally take place the year of a VPP recertification or the year prior to the recertification. As an organization, we have found that doing them the year of the audit prepares our sites for recertification and sets the site up for success.

Audits are typically a multiday process.

Auditors are comprised of craft from different sites, safety professionals, engineers, and management.

Process has been devolved to mirror what OSHA will do for a recertification audit.

Audit team also performs interviews of site personnel to prepare them for the types of questions that will be asked during an onsite audit.

Hauser VPP Internal Comprehensive Audit Schedule
Tuesday, March 19th – Wednesday March 20th, 2024
Hauser Plant, Helena, MT

Tue. 3/19/24	10:30 AM	Team meets, VPP Audit Process, Hazard Recognition Review	HAU Schoolhouse, All
	12:00 PM	Lunch	HAU Schoolhouse, All
	12:30 PM	Physical audit	Hauser Guide, Audit Team
	3:30 PM	Audit Team Round Table	HAU Schoolhouse, Audit Team
	4:00 PM	Closing	HAU, All
	4:30 PM	Adjourn	HAU, All
Wed. 3/20/24	7:30 AM	Team meets – MoveSafe	All
	7:45 AM	**Begin Document Review:** • Confined Space • LO/TO • Safety Meetings/Safety Committee • Tailboards • Hot Work Permits • Industrial Hygiene • Self-Inspections (Qt. Audits) • NCATS ▪ Events, Audits, Corrective Actions, NH/HC • Emergency Procedures • JSAs/JHAs • Preventive Maintenance • Electrical Safety • Contractor Safety • Vehicle/Equipment Inspections • OSHA Logs • Safety Commitment Statements	**Audit Team**
	10:30 AM	Begin Interviews	
	12:00 PM	Lunch	HAU Schoolhouse, All
	12:30 PM	Audit Team Roundtable	Audit Team
	1:30 PM	Closing	HAU Schoolhouse, All
	2:00 PM	Adjourn	HAU Schoolhouse, All

Internal Comprehensive Audit

Action items are identified in a similar manner to the quarterly walkdowns.

- Picture taken of the deficiency
- Deficiency is tagged
- Log is created of all action items

After the audit all the action items are tracked and expected to be closed out within 90 days.

- Supervisor and Safety Professional work together to ensure action items are addressed within the 90-day time limit.

Tag #	Pic	Explanation of Deficiency	Location
501		No fire extinguisher label and recharge	Grey Building
502		Salt Dogg lift load rating and mark trip hazards	Grey Building
500		Head knocker on low hanging heater	Grey Building
515		Remove/Replace plastic gas can.	Grey Building
503		Replace storage hook and label all hooks	Grey Building
516		Load rating on picking eyes on ceiling	Grey Building

Internal Comprehensive Audit

Daily closing conference with the work group

- Discuss any major action items identified
- Share best practices and noteworthy items observed

After the audit, a final report is produced and given to the site as well as management. The final report includes the following information:

- Overview of the physical inspection as well as a detailed action log
- Results of the employee interviews
- Areas of excellence
- Recommendations
- Element review findings

Safety Committee Walkdowns

Due to the remote nature of the various facilities, the Safety Committee picks a different location each quarter to meet at. If that meeting is taking place at one of the Hydro faculties, the committee takes a half a day and does an informal walkdown of the facility.

When the walkdown is complete, the Safety Committee meets with the work group to discuss some of the findings they observed and share best practices from their sites.

Craft Safety Committee members also pick a facility and participate in one of the quarterly walkdowns.

- This process provides a fresh set of eyes on a site for that quarter
- Committee members are required to do one audit of a different facility in the calendar year
- Audit participation is tracked during through the Safety Committee to ensure every member is participating

Auditor Training

Audit Teams and Auditors are not all Safety Professionals. Therefor there are some regulations and requirements that they may not be aware of.

Prior to all internal VPP audits, several hours are spent going over the following sections that are OSHA applicable standards to ensure all auditors are well versed on the standards that are applicable within our facilities.

Additionally, auditor training is performed periodically with the entire Hydro Group. Not all employees participate in internal audits annually or every other year. The organization has seen value in periodically performing the auditor training.

- General Hazards
  - Floors, Walkways, Doors, Exits, Fences. Gates
- PPE
- Hand & Power Tools
- Welding
- Fire Protection
- Housekeeping
- Medical/First Aid
- Machine Guarding
- Material Handling and Storage
- Electrical
- Lighting
- Nature & Environmental / IH

Best Practices

Discussion Topic

Virtual Reality Safety Training Opportunities

Exploring Collaboration: Gamified VR Safety Training for Power Generation Facilities

INNOVATIVE VR SOLUTIONS
ENHANCING SAFETY
TRAINING EFFECTIVENESS

Overview of VR Safety Training

Revolutionizing Safety Training

Innovative virtual reality Technology transforms traditional safety programs to enhance learning engagement.

Immersive VR Experiences

The platform offers immersive VR scenarios that simulate real industrial hazards and environments for practical training.

Gamification Elements

Incorporating gamification boosts motivation and engagement, making safety training more effective and enjoyable.

Scalable Industrial Training

VR safety training solutions are designed to be scalable, enabling widespread adoption across various industrial sectors.

Benefits of Gamified VR Safety Training

Enhanced Engagement

Gamified VR training boosts learner engagement with interactive and immersive safety scenarios.

Improved Knowledge Retention

Realistic scenarios in VR help learners retain safety knowledge effectively over time.

Cost and Risk Reduction

VR training lowers costs and minimizes risks by enabling safe, repeatable practice of safety protocols.

Relevance to the Power Generation Industry

Safety Challenges in Power Generation

Power plants encounter complex safety challenges and decision making, requiring specialized training for hazard prevention and emergency response.

VR Training Benefits

VR training simulates hazardous scenarios, allowing workers to practice safety skills without real-world risks.

Overview of Existing Safety Training in Power Generation

Current Training Approaches

Safety training typically involves classroom learning, on-the-job guidance, online and some simulation exercises.

Limitations of Training

Existing methods lack immersive practical experience, limiting readiness for real-life hazards.

Identified Gaps and Challenges

Limited Hands-on Practice

Trainees face challenges due to insufficient opportunities for practical, hands-on training during sessions.

Safety in Dangerous Scenarios

Simulating hazardous scenarios safely is difficult, impacting realistic and effective training experiences.

Inconsistent Training Quality

Variation in training standards results in inconsistent quality, affecting learning outcomes across different sessions.

Trainee Engagement Issues

Maintaining high engagement among trainees is challenging, limiting effective knowledge retention and participation.

Potential Improvements with VR Integration

Immersive Training Experience

VR integration offers deeply immersive environments that enhance user engagement and learning effectiveness.

Repeatable Skill Practice

VR allows repeated practice of skills in a controlled, consistent environment, improving mastery and confidence.

Safe Hazard Recognition

VR provides a safe platform for recognizing and responding to hazards without real-world risks.

Examples of Available VR Safety Training Modules

Electrical Safety Training

Modules simulate electrical safety scenarios to teach hazard recognition and safe handling practices effectively.

Working at Heights

Simulated environments help users practice safety protocols for working safely at heights to prevent falls.

Emergency Response

Engaging VR modules provide realistic emergency scenarios to improve quick decision-making and response skills.

Advantages of VR Training

Realistic Industrial Environments

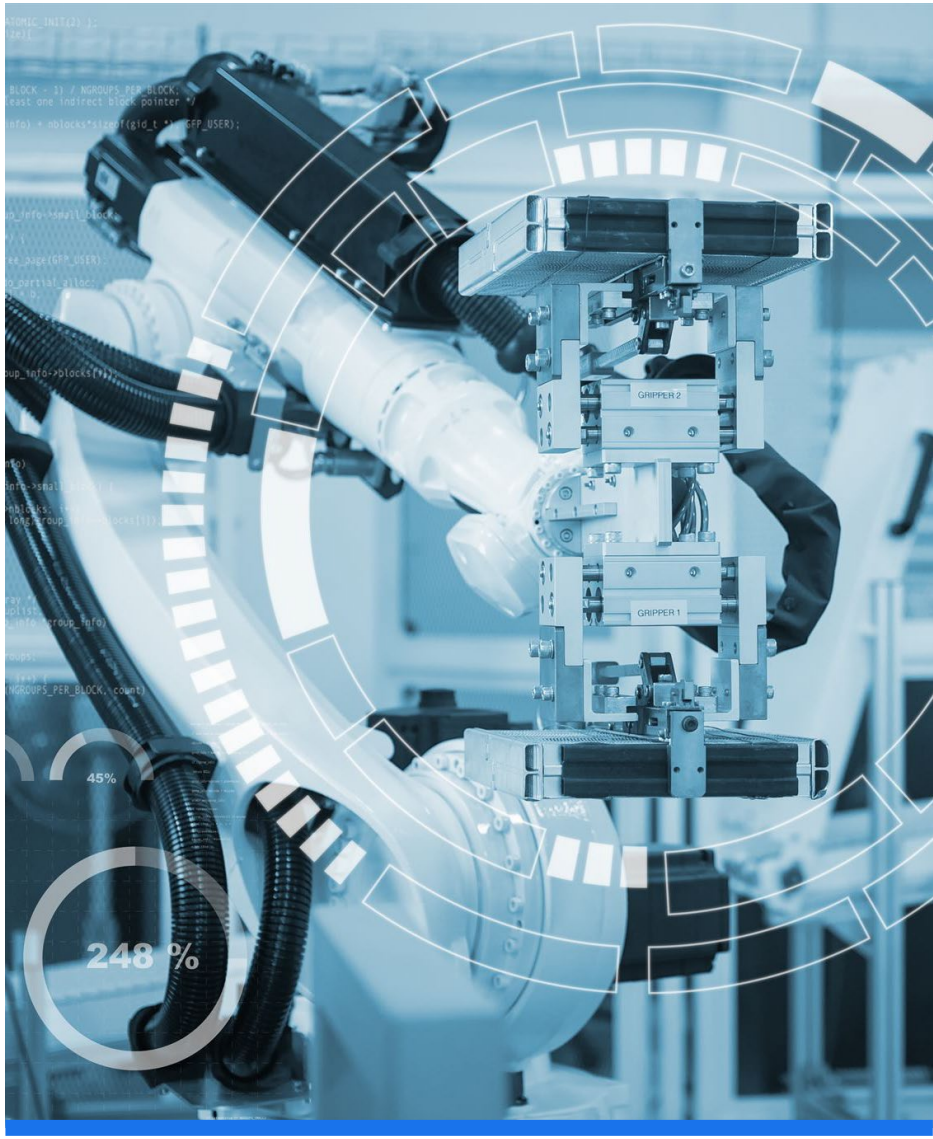
VR modules present detailed industrial settings to simulate authentic workspaces for effective training.

User Engagement Techniques

Interactive mechanics in VR encourage active trainee participation, enhancing learning retention.

Scenario-Based Challenges

Simulated safety challenges provide practical experience in handling real-world industrial hazards.



Key Features and Immersive Elements

Interactive Hazard Identification

Users engage in identifying hazards interactively to enhance learning and awareness effectively.

Real-Time Feedback

Immediate feedback helps learners correct mistakes and improve performance continuously.

Multi-User Collaboration

Collaboration among multiple users fosters teamwork and shared problem-solving skills.

Gamification Elements

Scoring and progression systems motivate learners and enhance engagement through gamified experiences.

User Experience Highlights

Increased User Confidence

Users feel more confident in their skills after VR training compared to traditional methods.

Better Knowledge Retention

VR training enhances learning retention by providing immersive and interactive experiences.

Greater Training Enjoyment

Users enjoy VR training more, increasing motivation and participation in learning activities.

Next Steps and Group Feedback

Determining Group Interest and Priorities

Gathering Training Needs

Collecting input on specific training requirements ensures relevant and effective skill development.

Content Focus Preferences

Understanding preferred topics helps tailor content to maximize engagement and learning outcomes.

Pilot Testing Engagement

Identifying willingness to participate in pilot tests supports effective implementation and feedback collection.

Conclusion

Innovative VR Training

Gamified VR training enhances safety education with immersive and engaging learning experiences in power generation facilities.

Collaboration Benefits

Collaboration bridges training gaps, enabling development of effective, immersive safety programs that improve outcomes.

2025 VPPPA Conference Schedule

- ~~Region 1 – May 5-8, Southbridge, MA~~
- ~~Region 2 – May 20-22, Hershey, PA~~
- ~~Region 3 – May 20-22, Hershey, PA~~
- ~~Region 4 – May 6-8, Stone Mountain, GA~~
- ~~Region 5 – June 9-12, Indianapolis, IN~~
- ~~Region 6 – May 19-22, Corpus Christi, TX~~
- **Region 7 – With VPPPA Safety+**
- **Region 8 – October 7-9, Salt Lake City, UT**
- ~~Region 9 – April 15-17, San Diago, CA~~
- ~~Region 10 – May 13-15, Portland, OR~~
- **VPPPA Safety+ - August 11-14, St. Louis, MO**

2025 Meeting Schedule

~~February 13th~~

~~May 15th~~

~~August 7th~~

November 13th

2026 Planning Meeting – TBD

Meetings are scheduled from 1430 – 1600ET
(1230 – 1400MT)