



# Artificial Intelligence at NPPD

THE  
POWER OF  
PEOPLE



NPPD Board of Directors Meeting  
**STRATEGIC SESSION**  
April 2025

Wyatt Leehy, Director of IT and Cyber Security  
Cory Hanson, Director of Business Transformation



Nebraska Public Power District  
*Always there when you need us*

# Where are we?

- **Artificial Intelligence (AI) Governance Committee**
  - Executive Sponsorship
  - AI Process Sub-Committee
  - AI Education Sub-Committee

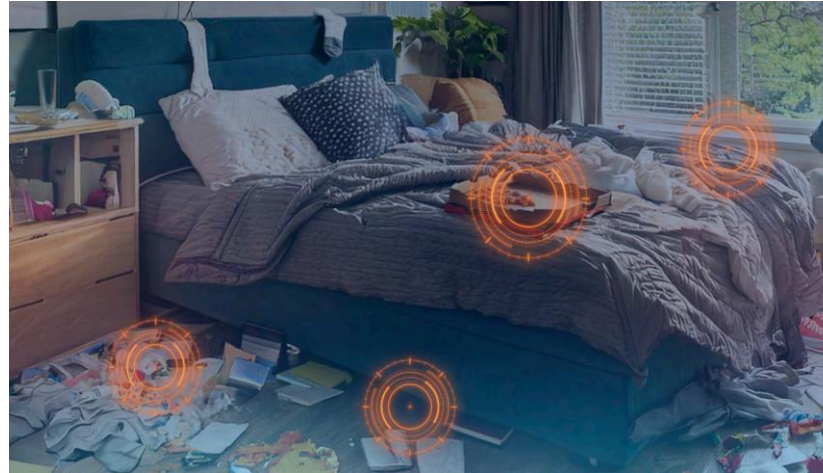
# NPPD's Vision

- **We are a premier energy provider bringing the best of public power to Nebraskans, powering everyday life and a brighter future.**
  - Leveraging technology to tackle relevant problems.
  - Creating a safer work environment for our teammates.
  - Creating a more efficient organization for customers and teammates.
  - Utilizing technology to deliver timely and outstanding customer service.
  - Focusing implementation on the delivery of reliable, low cost, and sustainable energy.

# Where will we see AI?

- **Generative AI:** Generates new content (text, images, videos)
  - ✓ Microsoft Copilot, Google Gemini, ChatGPT, etc.
- **Embedded AI:** Vendor-built AI to enhance new/existing applications
- **Build Your Own AI (BYOAI):** Custom-built by NPPD

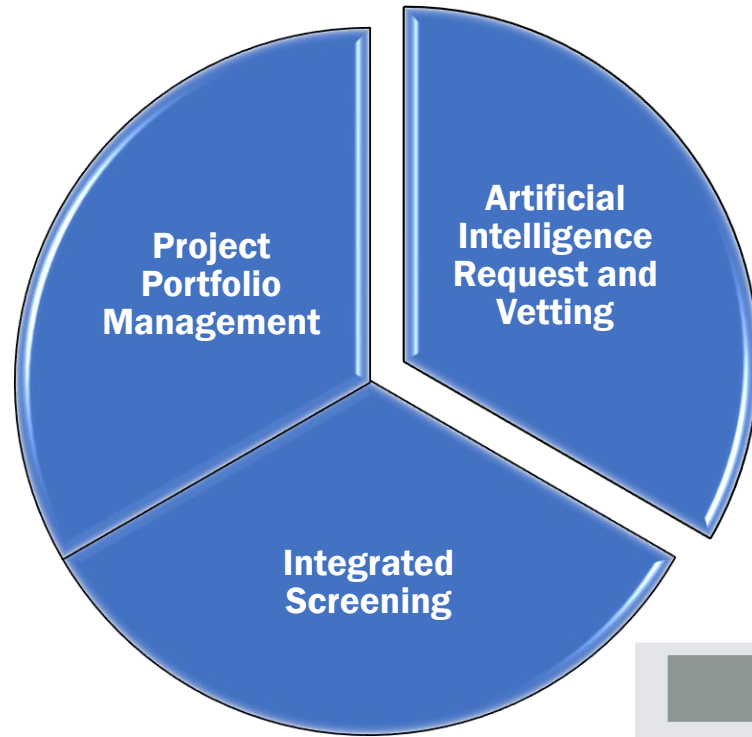
# How do we stay safe?



- **What data is being used?** Data Classification
- **Who can access the data?** Data Security
- **Where is the data going?** Data Loss Prevention
- **What happens to the data?** Contractual Guardrails
- **What data is coming back out?** Human Guardrails



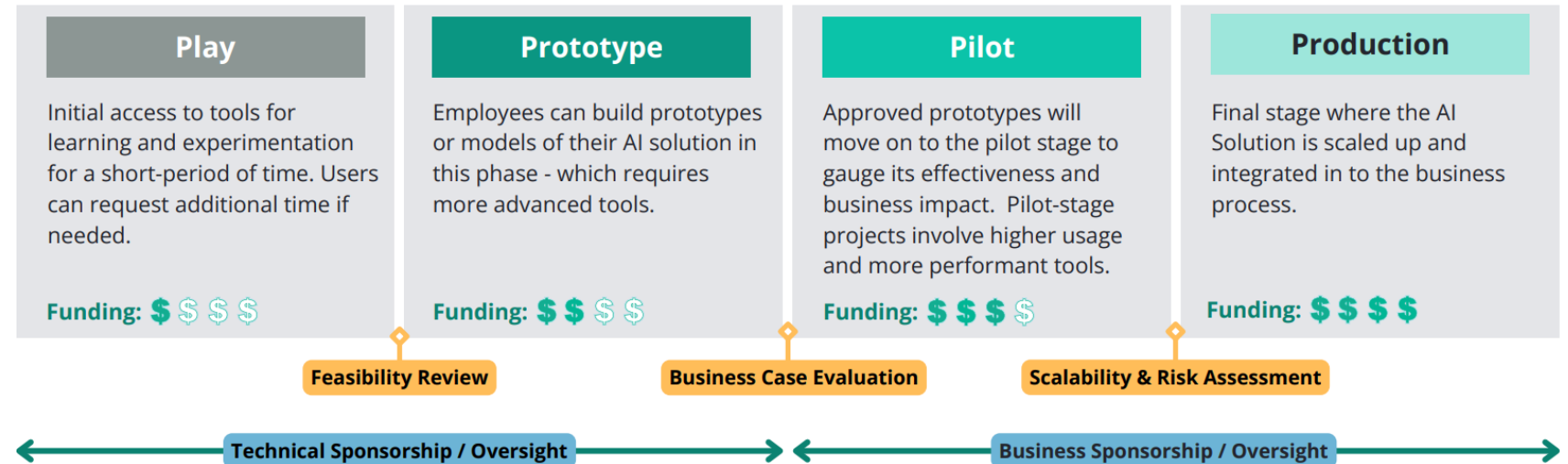
# Process



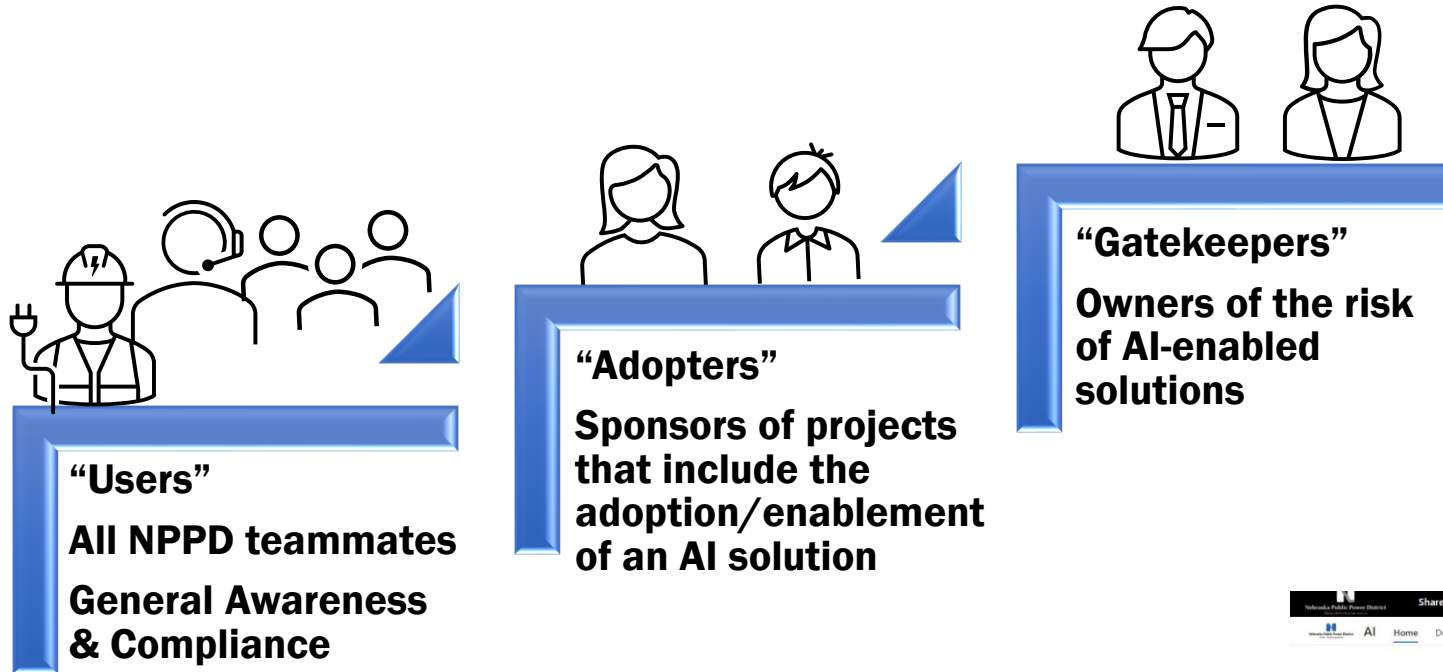
## AI Request Process

- Incorporate into current decision-making and prioritization frameworks
- Required training and education as a prerequisite
- Business case requirement (solving relevant problems)

## AI Testing/Implementation Process



# Education

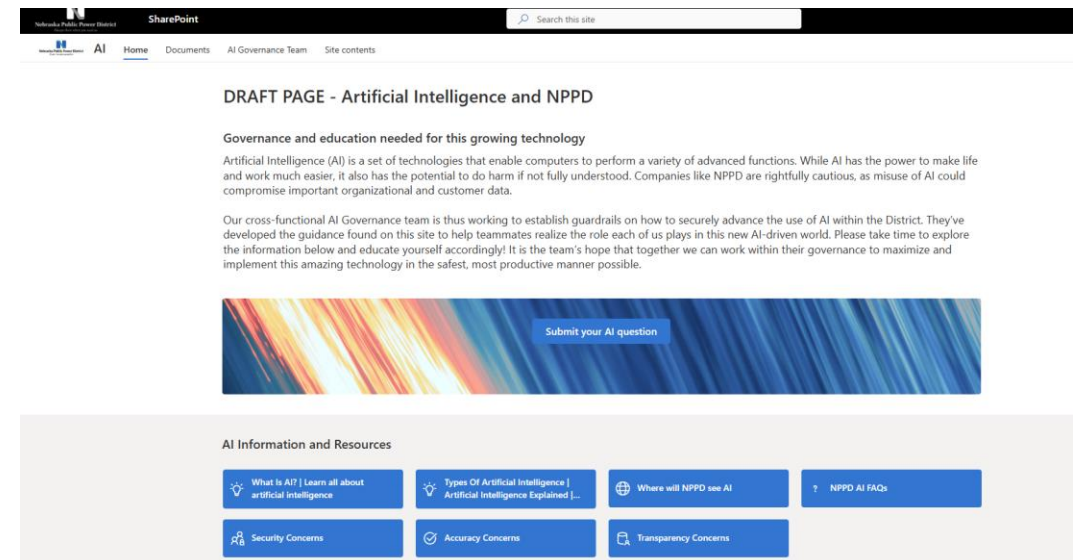


## Tiered Approach

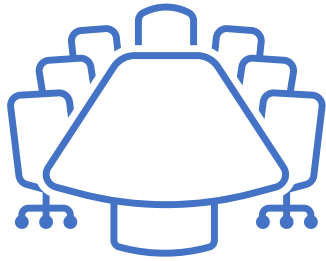
- Annual requirement incorporated with current training
- Depth of information aligned with responsibility

## Internal Website

- Home of AI governance documents
- Articles, case studies, and additional educational resources



# In-progress work



## AI Governance Committee

Cross-functional NPPD from different business units tasked to help build strategy, approach, and guardrails for use of AI across the District.



## Policy and Procedure Subcommittee

- Acceptable Use Policy
- AI request process
- AI vetting process
- AI implementation process



## Training and Education Subcommittee

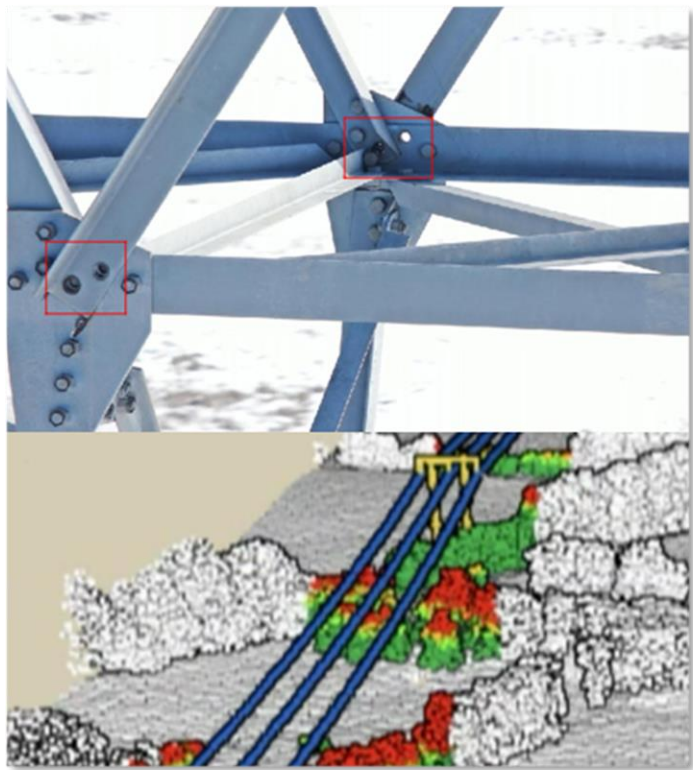
- District-wide training
- Leader training
- NPPD AI SharePoint



# Current AI Pilots and Projects

## Drone Program

- Line/Structure Inspections



Vegetation management models

## Smart Sensors

- Reliability and maintenance detection
- Emission Optimization



Patents granted



Asset Health



Machine Learning



Cross-Triggering



Relay Validation



Harmonics



Sags & Swells



Sequence of Events



Breaker monitoring



Fault Capture



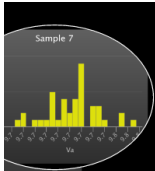
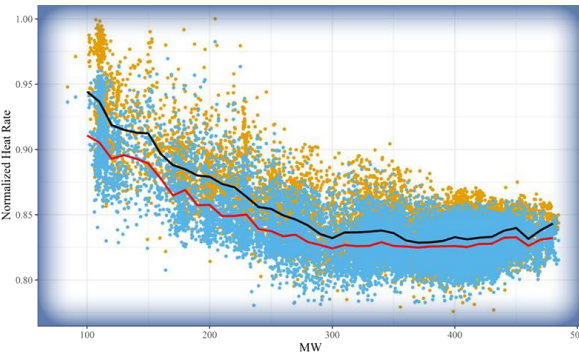
Distance to Fault



Hi-Z Faults

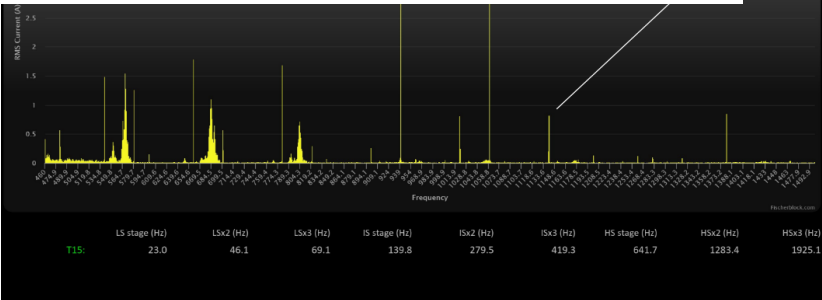


Alert Notifications



Changes in Frequency Spectrum indicate early problems with electrical systems and critical assets

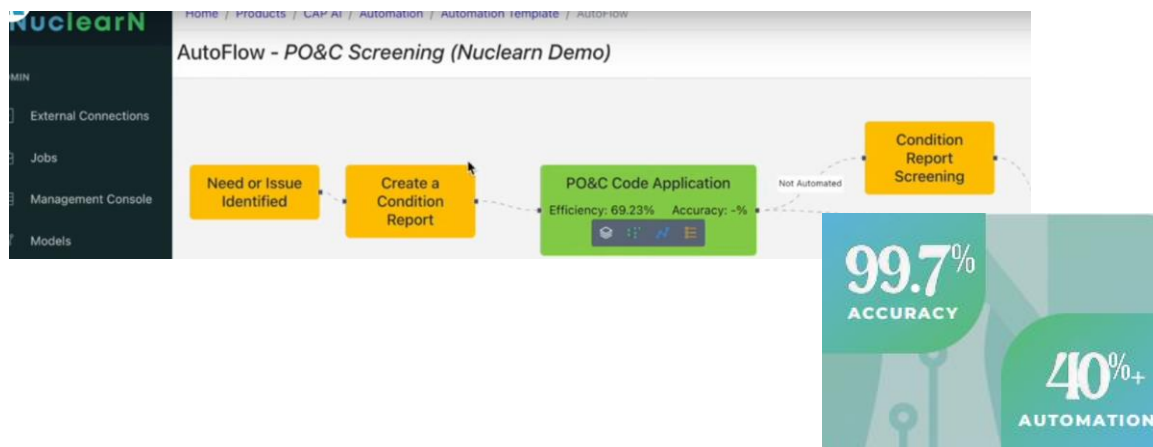
Providing advance notice of failure!!



# Current AI Pilots and Projects

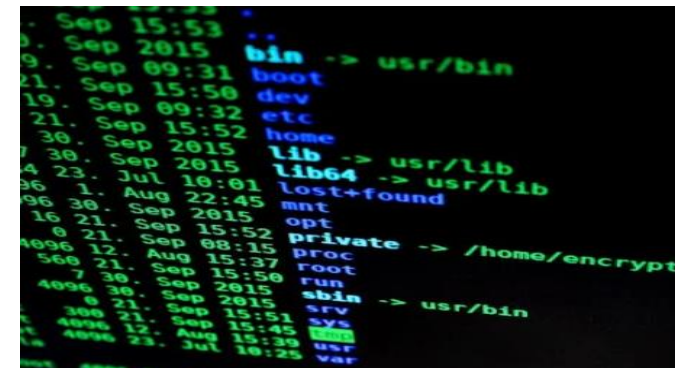
## NuclearN Corrective Action

- Trained models for automation of Corrective Action Screening process.
- Improves all facets of workflow efficiency from assignment of issue to resolution, trending, and regulatory impact screening.



## Cyber Security

- AI models trained on decades of cyber attack data.
- Enhanced threat detection.
  - ✓ Recognizes subtle patterns and anomalies.
- Faster response.
  - ✓ Organizes the priorities.
- See what human eyes cannot see.



# What comes next?

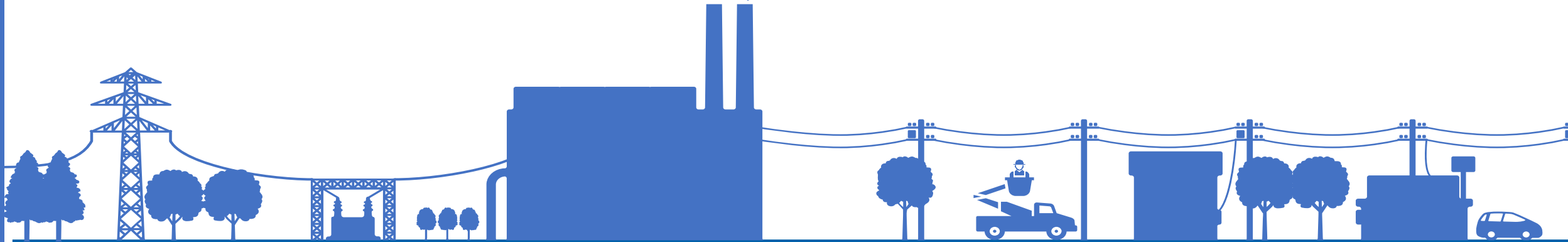


**Development of a  
framework for the  
exploration and  
implementation of AI**

**Understand  
problems and  
goals**

**Deploy with a  
focus on  
productivity**

**Solve real  
problems**





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## Questions?

Stay connected with us.



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