



# Developing a Strong Nuclear Safety Culture

**Larry Weber**

**Chief Nuclear Officer, Senior Vice President  
American Electric Power – Cook Nuclear Plant**

# Agenda

- 1. Actions of U.S. Nuclear Industry to Support Nuclear Safety**
- 2. Actions at the Cook Nuclear Plant to Support Nuclear Safety**
- 3. Developing Trust – Transparency with the Public**

# Larry Weber

- **Chief Nuclear Officer**
- **35 years experience in U.S. nuclear industry**
- **Held Senior Reactor Operators license**
- **Experience as Site Vice President, Plant Manager, Performance Assurance, Work Control, Health Physics**





# Cook Nuclear Plant

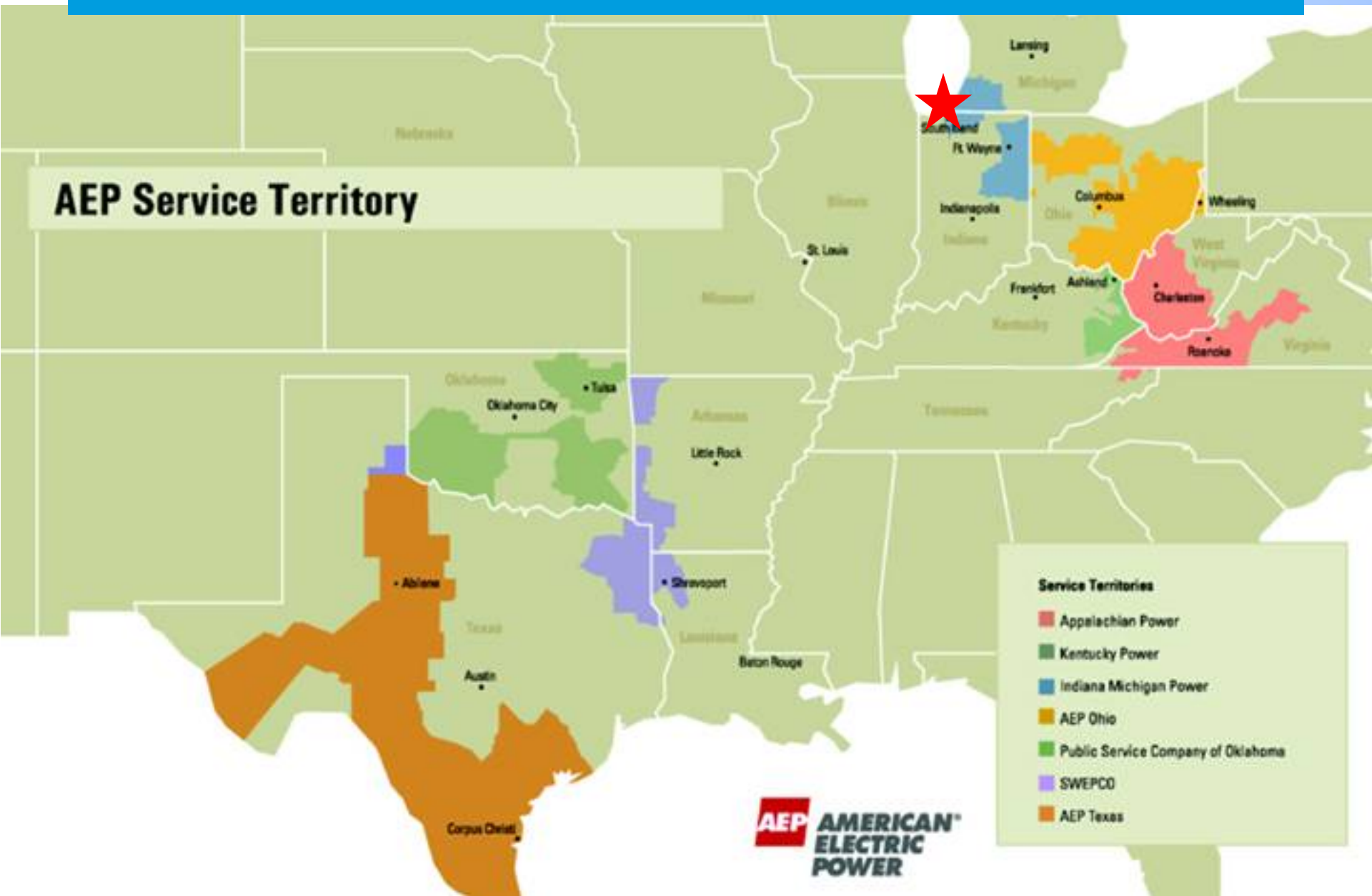


# Cook Nuclear Plant is Important to the Company and the Community

- **Unit 1 - 1,030 MW, Unit 2 - 1,077 MW**
- **Original construction cost \$1.3 billion**
- **Operational in 1975 and 1978**
- **Cook licenses extended to 2034 & 2037**
- **1,100 employees, \$100 million payroll**
- **Largest local tax payer >\$27 million**
- **Enough electricity for 1.5 million homes**
- **AEP is primarily coal generation**
- **Cook is 6% of total company generation**



# American Electric Power is one of the largest US utilities







# Developing a Strong Nuclear Safety Culture

## **Actions of U.S. Nuclear Industry to Support Nuclear Safety**



# U.S. Nuclear Regulatory Commission

- **NRC part of federal government**
- **Commissioners appointed by President**
- **More than 4,000 employees**
- **4 regional offices**
- **2 on-site inspectors at Cook**
- **Intrusive oversight programs**
- **Inspections increase for troubled plants**
- **Safety Culture Survey**
- **NRC looks for cross-cutting issues**
- **NRC shares plant results with the public**

# Institute of Nuclear Power Operations

- **Established by industry after Three Mile Island**
- **INPO results impact insurance costs**
- **Company executives support INPO**
- **Perform plant evaluation every two years**
- **Evaluations identify “Areas for Improvement”**
- **Best practices shared with industry**
- **Goals are set for Excellence**
- **Operating Experience program used in daily plant briefings**
- **Common performance indicators**
- **Significant Operating Event Report 10-2**

# Nuclear Energy Institute

- Represents industry to government and NRC
- NEI 09-07 – Comprehensive approach to developing Nuclear Safety Culture
- Shared industry information and analysis of industry issues and regulatory requests
- Promotes nuclear industry to the public
- Provides unified industry answers to the media



# Developing a Strong Nuclear Safety Culture

## **Actions at Cook Nuclear Plant to Support Nuclear Safety**



# Organizational Core Values

## Vision

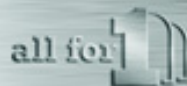
Cook Nuclear Plant:  
Reaching next levels  
of Excellence.

## Mission

We are a team focused on continuous learning that delivers safe, reliable and cost-effective energy while caring for our employees, community and environment.



**COOK NUCLEAR PLANT**



## Safety and Human Performance Guiding Principles

1. All injuries and events are preventable.
2. Responsible leadership and accountable employees prevent injuries and events.
3. Plan safety and human error reduction into our work.
4. Look out for yourself and each other.

**COOK NUCLEAR PLANT**



# Organizational Core Values

## Stay in Prevention

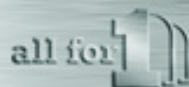
Maximize time spent on prevention and detection to minimize/eliminate correction activities.

Prevention

Detection

Correction

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## Engaged, Thinking Organization (SOER 10-2)

### Individuals

- Know the risk level of every job.
- Understand critical steps for each job.
- Understand and apply the standards for written instruction use and adherence.
- Understand "What is the worst thing that can happen?"
- STOP when uncertain and engage your supervisor.
- Discuss relevant operating experience for each job.

### Managers & Supervisors

- Perform risk assessments for all work activities and identify mitigation strategies.
- Identify critical steps and use the supervisor hold point stamp.
- Conduct performance observations, provide critical feedback and coach all deviations from standards and expectations.
- Know the performance trends in your area.
- Participate in Human Performance processes such as department level roll-up meetings to identify weaknesses in defenses.
- Identify and review relevant operating experience for each job.

### Senior Leaders

- Participate in high-risk briefings.
- Ensure the appropriate level of causal evaluation is assigned.
- Conduct performance observations, provide critical feedback and coach all deviations from standards and expectations.
- Conduct periodic backlog review.
- Participate in the review and evaluation of significant operating experience.
- Effectively communicate issues to the entire organization.

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# Corrective Action Program

- **We find and fix our own problems**
- **We track all conditions adverse to quality**
- **Issues are prioritized**
- **Safety-related items receive prompt attention**
- **Includes trending programs**
- **Closely monitored by plant, regulator and internal stakeholders**
- **Root cause evaluations done when necessary**

# Benchmarking and Self-Assessments

- **We set our goals at top 10% of industry**
- **High performing plants share processes with struggling plants**
- **Insular Plants typically develop problems**
- **Participating in INPO evaluations offers opportunities to see other plants**
- **Self assessments are intrusive**

# Performance Observation Program

- **Managers and supervisors “in the field” are key to performance improvement**
- **Attempt to minimize manager meetings and distractions**
- **Track and trend results**
- **Safety-related observations receive prompt response**
- **As observations increase, problems decrease**



# Safety Conscience Work Environment

- **All employees must feel free to raise safety concerns**
- **Employee Concerns Program (ECP) offers ALL employees a chance to raise issues**
- **ECP monitored closely by company executives and regulators**
- **No negative consequences for people who raise safety concerns**

# Internal Oversight

- **Nuclear Oversight Committee (NOC)**
  - **Committee of company Board of Directors**
  - **Meets quarterly to review plant performance**
- **Nuclear Safety Review Board**
  - **Reports to NOC**
  - **Retired industry / NRC executives and current nuclear senior manager peers**
  - **Quarterly intrusive look at key areas of plant performance**

# Internal Oversight

- **Performance Assurance**
  - **Performs internal audits and review**
  - **Subject matter experts from key departments participate on a rotational assignment**
  - **If department heads are not responsive, issues elevated to site senior managers**

# Internal Oversight

- **Management Review Meeting**
  - All site department heads
  - Meets monthly
  - Review more than 200 key performance indicators
  - Very challenging, yet collegial peer review and discussion
  - Indicators with declining trends require detailed recovery plan



# Developing a Strong Nuclear Safety Culture

## Developing Trust – Transparency with the Public

# Visitor's Center

- **Initially opened to the public during plant construction**
- **Long history of welcoming visitors and educating about the plant and industry**
- **Challenged by 9/11 increases in security**
- **We still offer educational outreach about nuclear power to schools**
- **Supports a historically strong level of local support**
- **Also supports environmental education**

# Transparency to Key Stakeholders

- **Process for briefing local government and business leaders on key issues**
- **Plant tours to government, regulators and even rate case interveners**
- **Communicate at lower levels than regulation requires on issues like Tritium**
- **Proactively contact media for coverage of plant activities**
- **Always responsive to media requests and questions from the public**

# Community and Employee Support

- **Extensive community outreach following Fukushima and 9/11**
- **Employee driven grant program distributes corporate contributions**
- **Company 50% match for employee donations**
- **Major contributor for Habitat for Humanity and local law enforcement**
- **Company backs employee community volunteer efforts**
- **Regular on-site blood drives**



# Community and Employee Support

- **Use of social media (Facebook) to engage younger generation and grow a wider range of support**
- **Plant provides information about nuclear issues to employees to discuss with families**
- **Cook offers annual “family tour” for employee friends and family**
- **Special outreach to communities closest to the plant**













# Developing a Strong Nuclear Safety Culture

- 1. Nuclear safety is everyone's responsibility.**
- 2. Leaders demonstrate commitment to safety.**
- 3. Trust permeates the organization.**
- 4. Decision-making reflects safety first.**
- 5. Nuclear is recognized as different.**
- 6. A “what if” approach is cultivated.**
- 7. Organizational learning is embraced.**
- 8. Nuclear safety undergoes constant examination.**



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