



# Developing a Strong Nuclear Safety Culture

**Larry Weber**

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

# Agenda

- 1. Actions of the 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**
- 4. External Impacts to Safety Culture**

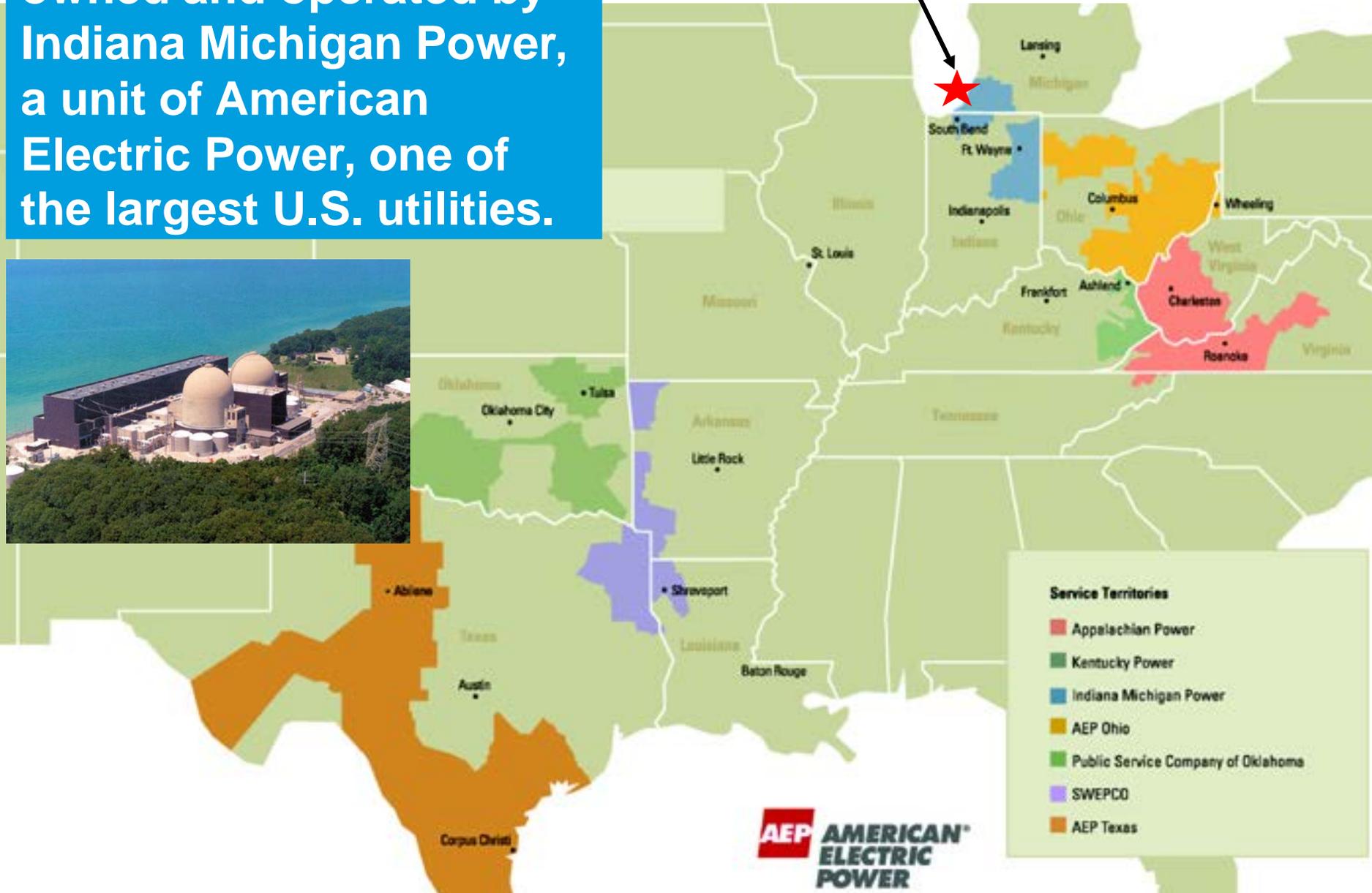
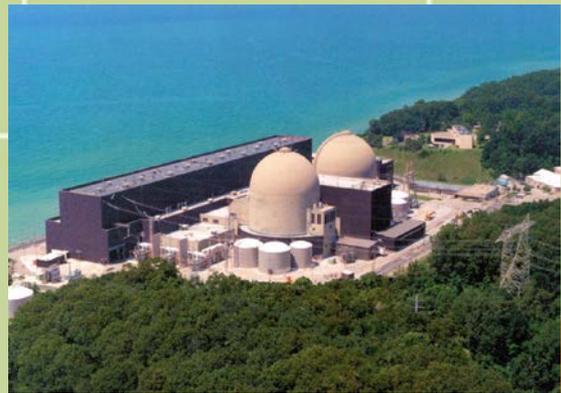
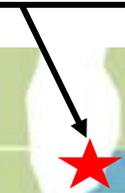
# Larry Weber

- **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 is owned and operated by Indiana Michigan Power, a unit of American Electric Power, one of the largest U.S. utilities.

# Cook Nuclear Plant



**Service Territories**

- Appalachian Power
- Kentucky Power
- Indiana Michigan Power
- AEP Ohio
- Public Service Company of Oklahoma
- SWEPCO
- AEP Texas





# 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**
- **Four regional offices**
- **Two 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

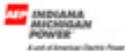
# Organizational Core Values

## 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

COOK NUCLEAR PLANT



## 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.

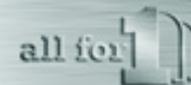
### Managers & Supervisors

- 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.

COOK NUCLEAR PLANT



# American Electric Power's Commitment to

# Nuclear Safety



Nick Akins  
President and  
Chief Executive Officer  
American Electric Power



Bob Powers  
Executive Vice President  
Chief Operating Officer  
American Electric Power



Larry Weber  
Senior Vice President  
Chief Nuclear Officer  
American Electric Power



To: All Cook Nuclear Plant Employees  
From: Nick Akins, Bob Powers and Larry Weber  
Subject: AEP's Commitment to Nuclear Safety

Commitment to nuclear safety and a strong nuclear safety culture is vital in achieving performance excellence at a nuclear power plant. In my long history of involvement with Cook personnel, I know that commitment is a strong part of the Cook culture.

The purpose of this communication is to reinforce my expectations as American Electric Power's president and chief executive officer that nuclear safety is the number one priority at AEP's Cook Nuclear Plant. This expectation is shared by Bob Powers, executive vice president and chief operating officer and Larry Weber, senior vice president and chief nuclear officer.

Nuclear safety takes precedence over all other considerations in the design, construction, operation, modification, and maintenance of Cook. Nuclear safety shall have clear priority over schedule, cost, and production.

This policy statement is intended to provide absolute clarity about the AEP nuclear safety philosophy. However, true commitment to the enhancement of nuclear safety means more than writing a policy statement. Commitment means not only providing leadership but also developing, in partnership with the Cook staff and their representatives, the means of translating the nuclear safety goals of the organization into a day-to-day reality. It means genuinely devoting time and resources to nuclear safety and requires that Cook staff and management be trained and, in particular, have the necessary competence in matters relating to nuclear safety.

Cook poses unique hazards which include radioactive by-products, a large concentration of energy in the reactor core, and decay heat which must be managed long after reactor shutdown. The health and safety of the general public and Cook employees is essential and shall be considered in all aspects of Cook operations. It is the responsibility of AEP and the Cook management team to provide the leadership that nurtures and maintains a strong nuclear safety culture.

The definition of Nuclear Safety Culture: Nuclear Safety Culture: An organization's values and behaviors – modeled by its leaders and internalized by its members – that serves to make nuclear safety the overriding priority.

Implied in this definition is the notion that Cook is designed, built, and operated to produce power in a safe, reliable, and efficient manner. The concept of nuclear safety culture applies to every employee from the board of directors to the individual worker. However, please remember that while the focus of this policy is on nuclear safety, the same principles apply to radiological safety, industrial safety, and environmental safety.

A safety-conscious work environment (freedom to raise concerns without fear of retribution) is but one (albeit important) element of a strong nuclear safety culture. The Cook nuclear safety culture is founded upon the Institute of Nuclear Power Operation's "Traits of a Strong Nuclear Safety Culture." AEP, the Cook line organization and all support organizations shall internalize and support these traits. Cook leadership is expected to assess these traits against their day-to-day policies and practices and to use any differences as a basis for improvement. Senior management expects all individuals on site to report any shortfalls in meeting these traits through any reporting vehicles available at Cook.

One important reporting vehicle is the Corrective Action Program. This is also a regulatory requirement. An effective Corrective Action Program contributes substantially to nuclear safety culture because it provides a straightforward method for reporting issues at Cook. It provides a verifiable process for analysis of the issues, recommendations for resolution, and corrective actions. AEP and Cook leadership fully support the Corrective Action Program and will also understand and support the right of any individual to raise a safety concern.

**Nick, Bob and Larry**

# 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**

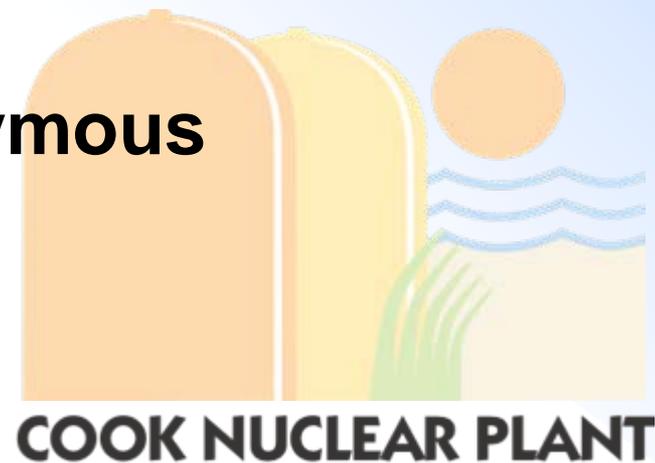


# Performance Observation Program

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

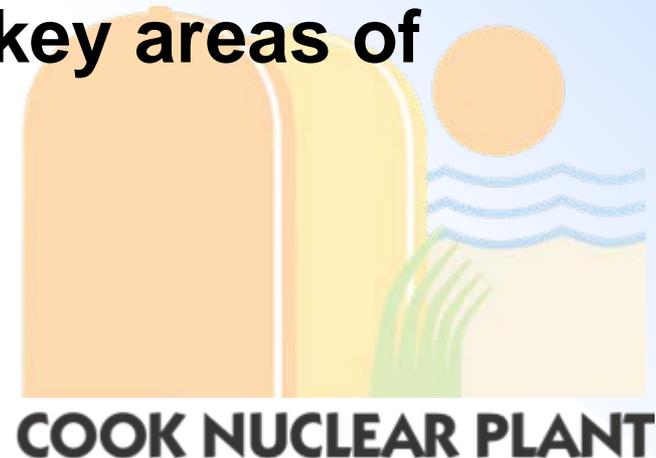
# Safety Conscience Work Environment

- **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**
- **Employees can remain anonymous**



# 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**

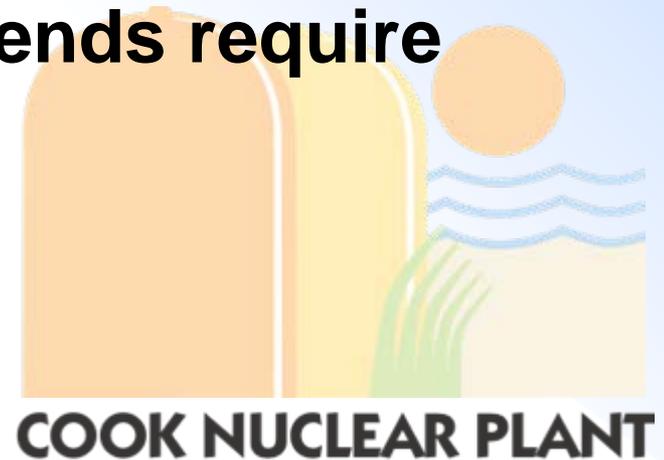


# Internal Oversight

- **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 and educating visitors 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 matches some 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 residents immediately adjacent to the plant**



# Developing a Strong Nuclear Safety Culture

## External Impacts to Safety Culture



## External Impacts on Safety Culture

**Low Natural Gas Prices**

**Reduced / Stagnant  
Electricity Demand**

**Fukushima Upgrade Costs**



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