U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Public Meeting to Discuss Recent Performance Issues at the Palisades Nuclear Plant

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Nuclear Regulatory Commission - Region III

South Haven Michigan

February 29, 2012

Introduction

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Acting Regional Administrator, RIII

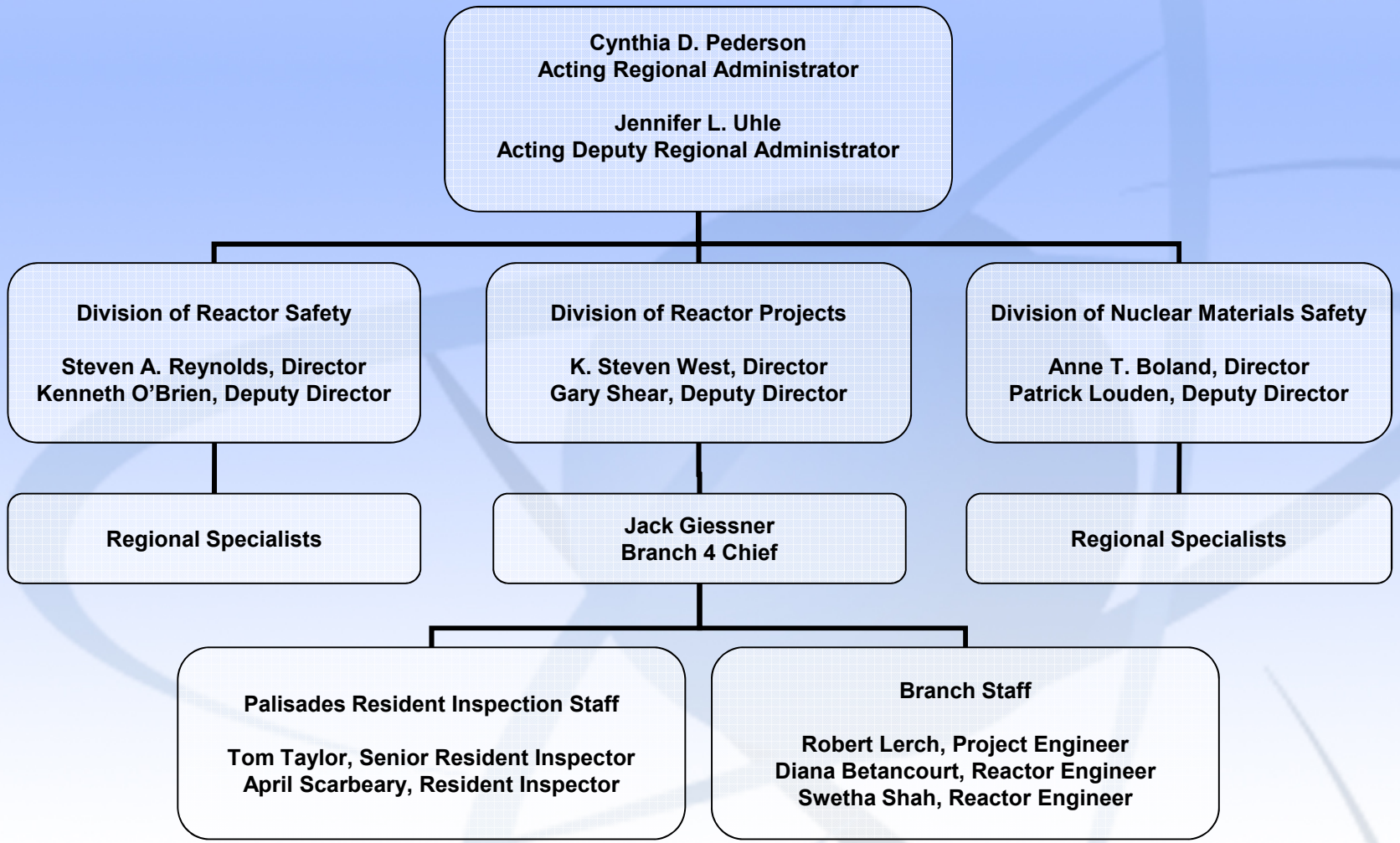
Purpose of Today's Meeting

- NRC will address recent performance issues at Palisades
  - Discuss issues
  - NRC actions
  - Q & A

Agenda

- Introduction
- NRC role / mission
- Discussion of Palisades performance and NRC actions
  - Licensed operator leaving his post
  - Auxiliary feed water pump failure to function
  - Service water pump coupling failure
  - Complicated plant shutdown caused by fault during work on an electric panel
- NRC response
- Break
- Q & A

Region III Organization



Our Mission

License and regulate nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

- Establishing rules and regulations
- Issuing licenses
- Providing oversight through inspection, enforcement, and evaluation of operational experience
- Conducting research to provide support for regulatory decisions
- Responding to events and emergencies

Cornerstones

Mission

PUBLIC HEALTH AND SAFETY AS A RESULT OF CIVILIAN NUCLEAR REACTOR OPERATION

Strategic Performance Areas

REACTOR SAFETY

RADIATION SAFETY

SAFEGUARDS

Cornerstones

- INITIATING EVENTS
- MITIGATING SYSTEMS
- BARRIER INTEGRITY
- EMERGENCY PREPAREDNESS
- PUBLIC RADIATION SAFETY
- OCCUPATIONAL RADIATION SAFETY
- SECURITY

Significance Threshold of Inspection Findings and Indicators

Safety significance	NRC Response
Green (very low)	Routine NRC Inspections
White (low to moderate)	Increases NRC oversight
Yellow (substantial)	Increases NRC oversight
Red (high)	Increases NRC oversight

Action Matrix Concept

Licensee Response I	Regulatory Response II	Degraded Cornerstone III	Multiple/Rep Degraded Cornerstone IV	Unacceptable Performance V

Increasing Safety Significance

Increasing NRC Inspection Efforts

Increasing NRC/Licensee Management Involvement

Increasing Regulatory Actions

National Summary of Plant Performance

Status as of 2/15/2012

I	Licensee Response	87
II	Regulatory Response	12
III	Degraded Cornerstone → Palisades now	3
IV	Multiple/Repetitive Deg. Cornerstone	1
V	Unacceptable	0
	Total	*103

*Fort Calhoun - shutdown and requires NRC permission to restart

Summary of Safety Significant Findings

Plant continues to operate safely, but performance has degraded

- **Operator leaves his post – Confirmatory Order.**
- **An Auxiliary Feed Water pump failed to function – White Finding (low to moderate safety significance)**
- **Service Water Pump coupling failure – White Finding (low to moderate safety significance)**
- **Complicated shutdown caused by fault during work on an electric panel - Yellow Finding (substantial safety significance)**

Palisades Issue: Operator Leaves His Post, October 2010

What Happened:

- Palisades licensed operator left the control room without following procedures

NRC action:

- NRC ensured plant took immediate actions
- Increased observations of control room performance
- NRC issued a Confirmatory Order requiring Entergy fleet, Palisades plant and the licensed operator to implement a wide range of corrective actions

Palisades Issue: Auxiliary Feed Water Pump Did Not Function, May 2011

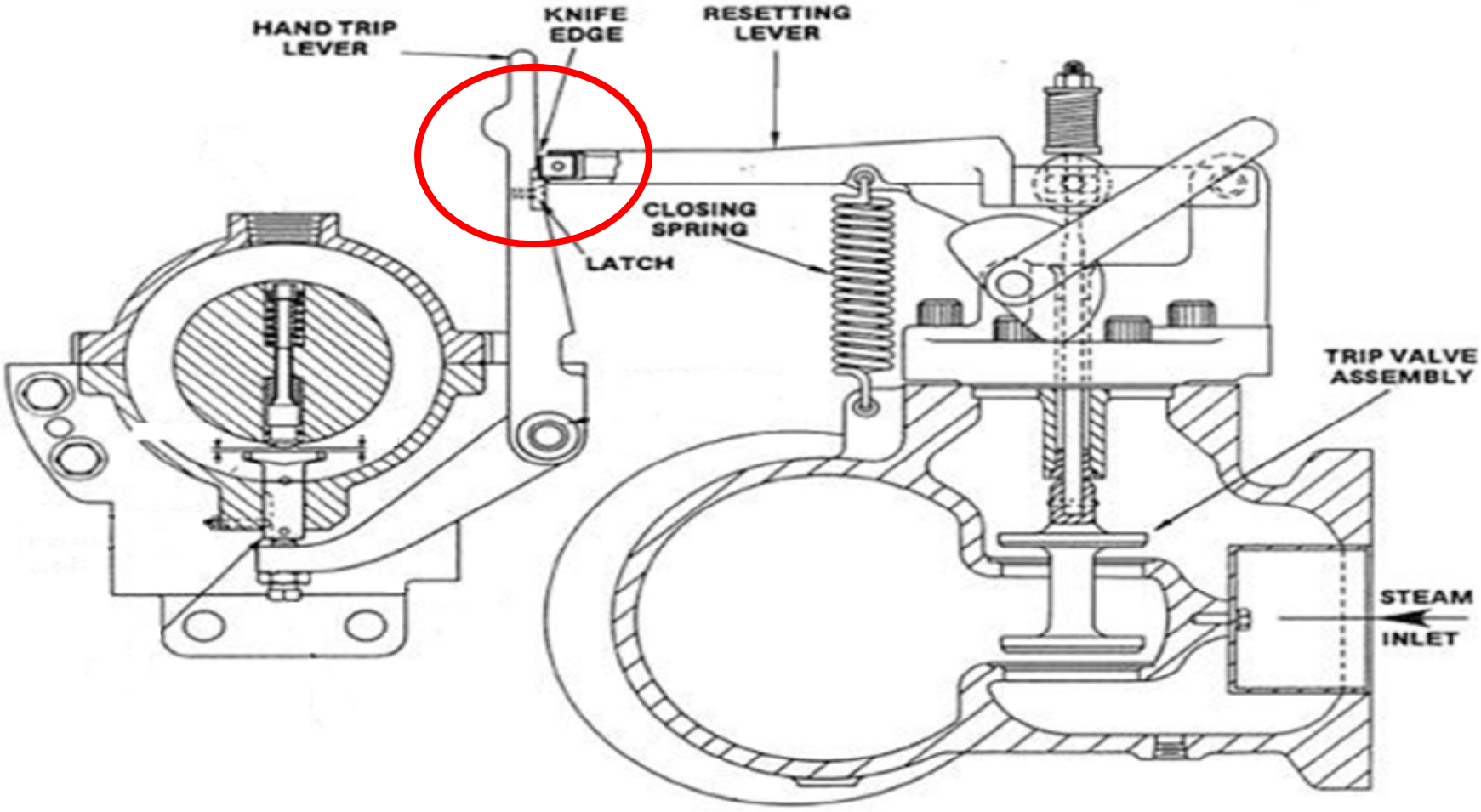
What Happened:

- **The pump tripped during routing testing**
- **In 2010, maintenance greased a pump component that should not have been greased, which resulted in pump failure**

NRC action:

- **Ensured immediate corrective actions completed**
- **Observed testing to validate pump's reliability**
- **Assessed risk of not having the pump available as moderate/White and issued a violation for pump failure**

Turbine Driven Auxiliary Feedwater Pump Schematic



Palisades Issue: Service Water Pump Coupling Failed, August 2011

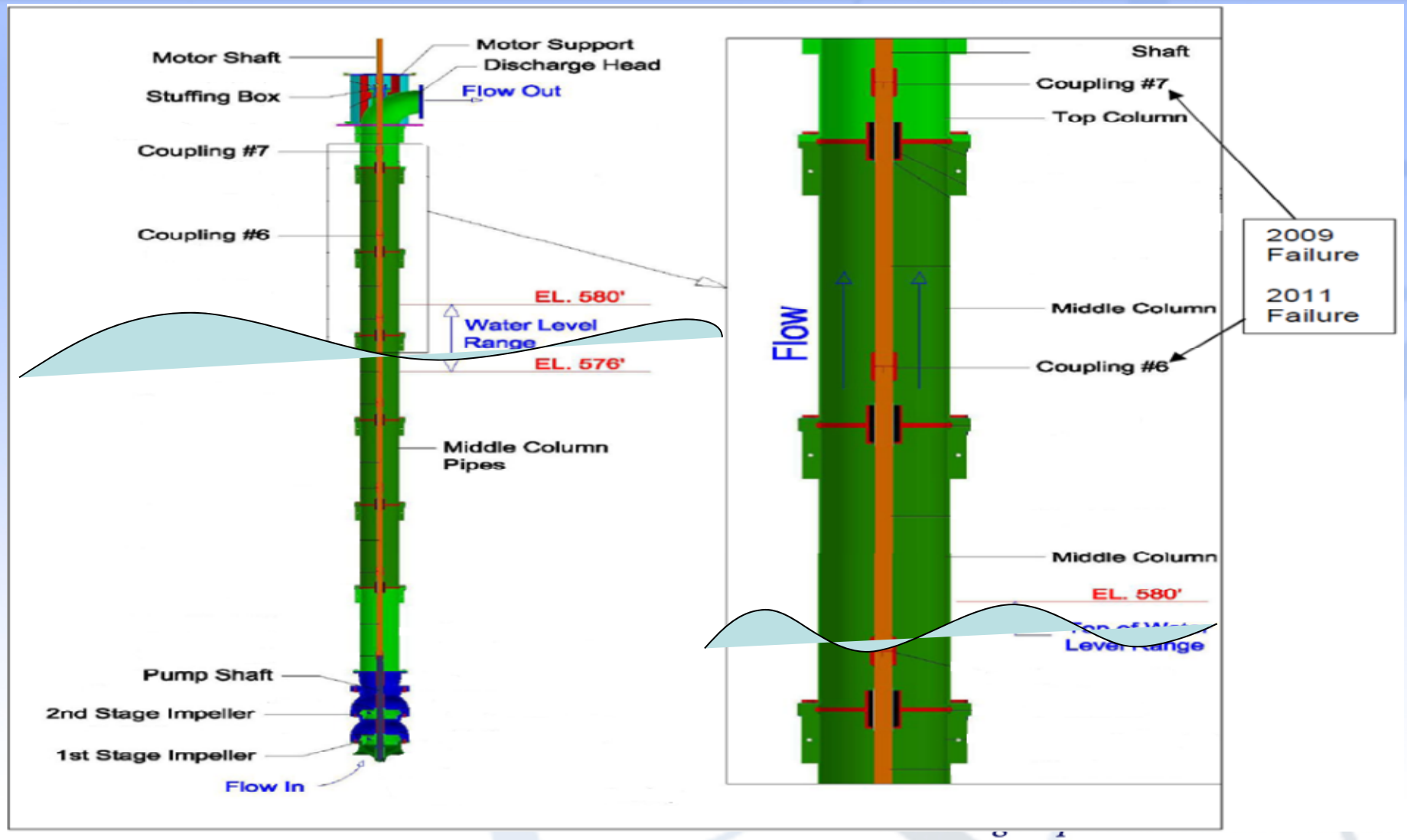
What Happened:

- 1 of 3 service water pumps failed. The cause was the #6 coupling (that connects two shaft pieces) fractured
- Similar to a failure on the same pump in 2009 (#7 coupling)
- Failure was caused by stress corrosion cracking
- Type of steel used was not adequately evaluated

NRC action:

- Ensured immediate corrective actions were complete
- Dispatched a team of experts to evaluate the issue
- Assessed the risk of the event as moderate/White and issued a violation for pump failure

Affected Service Water Pump Section



Palisades Issue: Complicated Plant Shutdown Caused by Fault During Work on an Electric Panel , September 2011

What Happened:

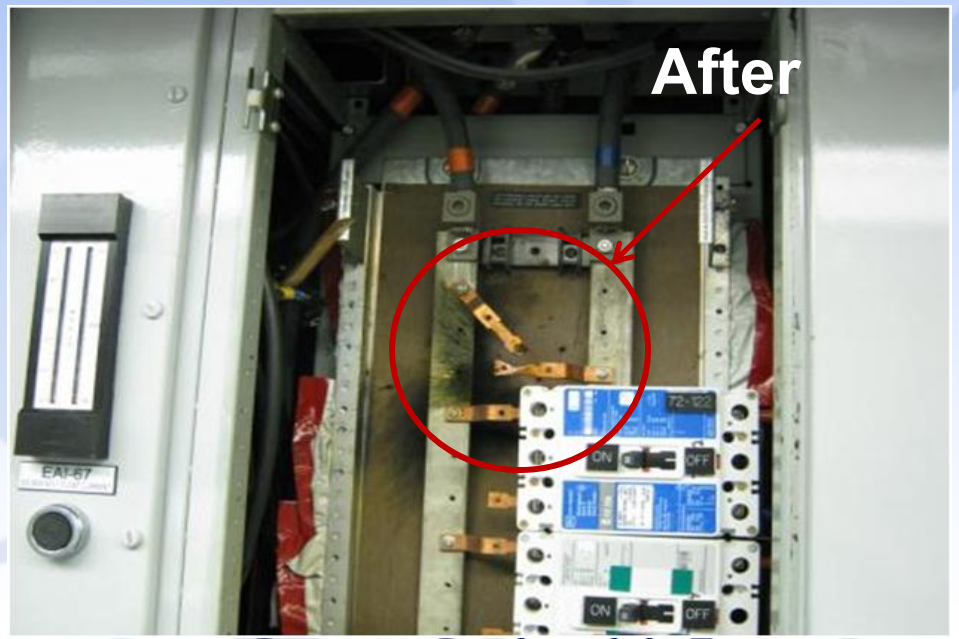
- While performing maintenance on an electrical panel, metal from the panel contacted another metal piece of an opposite charge, resulting in a 'short' and complicated shutdown
  - Loss of indications and control of equipment
  - Equipment operation challenged operators
  - Degradation of safety culture possibly contributed to event

NRC action:

- Required immediate corrective actions completed prior to plant startup
- Dispatched a team of experts to evaluate the issue
- Assessed the risk of the event as significant/Yellow and issued violation

Electrical Panel Issue, September 2011

A reactor scram occurred when a worker was performing maintenance activities on an electrical panel. The highlighted metal pieces have opposite charge, when they came into contact, they caused an electrical arc and loss of the bus.



Palisades
Current Performance

- **Palisades continues to operate safely**
- **NRC placed Palisades in Column III of the Action Matrix (Degraded Cornerstone)**
- **If the NRC determines the plant is not operating safely, we will shut down the plant**

NRC's Response to Issues 2011

- Routine inspections ~ 2000-2500 hours
- Additional inspections to address plant issues – over 1000 hours

NRC's Response to Issues 2012

- NRC required immediate actions from the site
- NRC will do follow-up inspections on all three greater than green findings and confirmatory order
- NRC will independently evaluate the issues
  - Adequate actions to prevent the issue from occurring again
  - Determine if the condition that existed could exist in other equipment
  - Determine the root/underlying causes and evaluate if those causes could lead to other events
  - Determine if problems with safety culture caused or significantly contributed to the events

Closing Remarks

Cynthia Pederson

Acting Regional Administrator, RIII

Questions/Comments

Open to the Public

- The NRC places a high priority on keeping the public and stakeholders informed of its activities.

- At www.nrc.gov, you can:
  - Find public meeting dates and transcripts;
  - Read NRC testimony, speeches, press releases, and policy decisions; and
  - Access the agency's Electronic Reading Room to find NRC publications and documents.

Contacting the NRC

- Report an emergency
  - (301) 816-5100 (call collect)
- Report a safety concern
  - (800) 695-7403
  - Allegation@nrc.gov
- General information or questions
  - www.nrc.gov
  - Select “What We Do” for Public Affairs

NRC Representatives

- Viktoria Mitlyng, Office of Public Affairs, RIII
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- John "Jack" Giessner, Branch Chief, Division of Reactor Projects
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- Tom Taylor, Senior Resident Inspector
  - (269) 764-8971
- April Scarbeary, Resident Inspector
  - (269) 764-8972

Reference Sources

- Reactor Oversight Process
  - http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html
- Public Electronic Reading Room
  - http://www.nrc.gov/reading-rm.html
- NRC Information Digest
  - http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/
- Public Document Room
  - 1-800-397-4209 (Toll Free)