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# Kewaunee Power Station

**NRC Region III  
Regulatory Conference**

**Loss of PPCS Indication For SPING RMs**



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# Agenda

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- **Opening remarks**
- **Event description**
- **Regulatory significance**
- **Conclusion**
- **Closing remarks**



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## Opening Remarks

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**Dominion is committed to  
preserving the health and  
safety of the public**



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# Opening Remarks

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- **Preliminary Violation**

- **10 CFR 50.54 (q)(2) & 10 CFR 50.47 (b)(4)**
  - **Kewaunee Power Station's unidentified loss of SPING indication on the PPCS and RADSERV stations precluded action to restore the capability to classify EALs RG1.1 and RS1.1**
    - **Agree performance deficiency existed**
    - **Differ with significance of finding**

# Event Description

- **Hardware failure**
  - **RADSERV**
    - Interface between SPING units and PPCS
  - Additional Data Acquisition Modules lost
  - Local SPING indication remained available
  - Upon discovery of RADSERV failure, restoration completed same day





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# Regulatory Significance

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## **RADSERV failure- Hardware issue**

**Previous hardware failures have been  
evaluated under  
10 CR 50.47(b)(8)**

# Regulatory Significance

## 5.8 10 CFR 50.47(b)(8), Emergency Facilities and Equipment

### PLANNING STANDARD:

- Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

### PS FUNCTIONS:

1. Adequate facilities are maintained to support emergency response.
2. Adequate equipment is maintained to support emergency response.

# Regulatory Significance

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- **NUREG 0654**
  - **H. Emergency Facilities and Equipment**
    - **5.b. radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);**



# Regulatory Significance

## 10 CFR 50.47 (b)(8)

- **White threshold**
  - **Equipment necessary to implement the E-plan is not available or not functional**
    - **Period of longer than 7 days from time of discovery**
    - **Without Compensatory Measures**



# Regulatory Significance

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## 10 CFR 50.47 (b)(8)

- **Green threshold**
  - A significant amount of equipment necessary to implement the E-plan is not available or functional to the extent that any key ERO member could not perform his/her assigned functions, in the absence of compensatory measures.

# Regulatory Significance

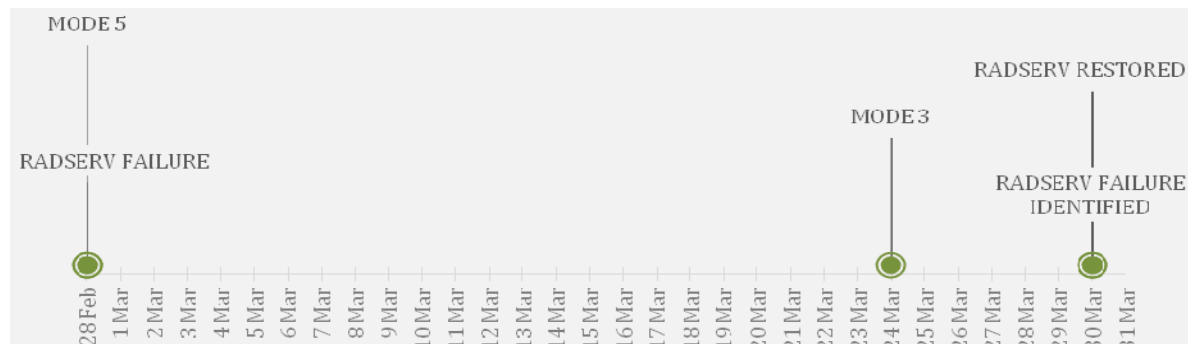
## IMC 0609 Basis

Not all hardware failures under control of licensee

- RADSERV failure
- Hardware failure

Assessed by scope of outage from discovery

- Restored same day of discovery



# Regulatory Significance

- **Industry OE**
  - **Columbia Generating Station (05000397/2012502)**

Finding	Standard	Significance
Effluent Monitor Classification Thresholds	10 CFR 50.47(b)(4)	White
Inaccurate methods for assessing the offsite consequences of a radiological release were inaccurate	10 CFR 50.47(b)(9)	White
Reactor Building High Range Exhaust monitor was unavailable 38 of 149 months and corrective actions were ineffective in restoring the availability and reliability of the monitor	10 CFR 50.47(b)(8)	Green – Licensee Identified

# Regulatory Significance

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- **Columbia Green Finding**
  - **10 CFR 50.47 (b)(8)**
  - **Failed to provide and maintain RX Building High Range Exhaust RM**
    - **Unavailable 38 out of 149 months**
  - **Planning Standard determined to be degraded**
    - **Causing potential delays**
      - **Classification and radiological assessments**

# Regulatory Significance

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- **Columbia White Finding**
  - **Finding**
    - **10 CFR 50.54(q) and 10 CFR 50.47(b)(4)**
    - **Failure to maintain a standard EAL scheme**
      - **Inappropriately calculated and changed RM thresholds for Site Area Emergency and General Emergency**



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## Additional Information

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- **Actual duration of vulnerability**
  - Fast breaking LOCA
  - RCS > 350°F on 3/24/11 at 0300
  - Six days
- **Classification Methodology**
  - Shift Manager perspective

## Additional Information

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- **EAL scheme diversification**
  - **NEI 99-01 Rev. 4**
    - Fission product barrier challenges
    - Effluent ICs do not stand alone
    - EOPs and CSF reduce ambiguity and time
  - **NRC Regulatory Analysis of NEI 99-01**
    - Plant conditions more timely than radiological measurements





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# Root Cause Evaluation

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## RC-1

**Absence of a programmatic requirement to periodically monitor RADSERV and PPCS**

## RC-2

**System platform is obsolete and difficult to maintain**



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## Conclusions

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- **RADSERV failure was a hardware issue**
  - **Restored same day as discovery**
- **10 CFR 50.47 (b)(8) Green Finding**
  - **Precedence of the Columbia finding**



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## Closing Remarks

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- **Dominion Acknowledges**
  - **Degraded planning standard**
  - **Importance of equipment associated with EP**
  - **Violation has occurred**
  - **Corrective actions**



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## Closing Remarks

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