

10/24/06

failure to include a quantitative analysis  
Specifically, the failure to account for this transfer time reduced the margin

Documenting Findings  
October 24, 2006  
Presented by Ann Marie Stone

The basis for this conclusion was that despite the loss

Agenda

- Documentation Tools
- "Brief" Overview of IMC 0612
- Example
- "Homework"

Documentation Tools

- Inspection Manual Chapter 0612
- Inspection Manual Chapter 0609
- Inspection Manual Chapter 0620
- Region III Model Report
- NRC Stylist \*
- Various Checklists
- Other Inspectors and Branch Chiefs

→ guidance for analyzing issues greater than green

→ what documents we provide to public,

Model Report → DRP, R III Model Report

refer to Analysis for CDBI of Duane Arnold

A-12

## Overview of IMC 0612

- Outlines the “who, what, where, how, and why” of inspections
- Provides insights on “How to” inspect!
- Provides guidance on documenting entire inspection report – specifically for routine report and general guidance for other reports

---

---

---

---

---

---

---

---

## Inspection Scope – What did you do?

- How the inspection was conducted?
  - Walk-down, an in-office review, observation of test from the control room, discussion with specific personnel, or participation in an exercise.
- What was inspected?
  - Which and how many samples
- How did you assess?
  - inspection objectives and the criteria used

---

---

→ reviewed operator logs, plant computer data

---

→ 5 <sup>samples</sup> human perf

---

→ verified corrective actions

---

---

---

---

### a. Inspection Scope

The inspectors: (1) reviewed operator logs, plant computer data, and/or strip charts for the below listed evolutions to evaluate operator performance in coping with nonroutine events and transients, (2) verified that operator actions were in accordance with the response required by plant procedures and training; (3) attended and/or reviewed postevent critic meetings; and (4) verified that Amerent/E identified and implemented appropriate protective actions associated with any human performance problems that occurred during the nonroutine evolutions sampled.

- 1 • March 29, 2006. Cooling tower blowdown pipe leak and Intium sampling. CAR 200602491
- 2 • April 3, 2006. Operations personnel not able to meet FSAR assumed establishment of cold leg recirculation emergency core cooling system mode. CAR 200602565
- 3 • May 12, 2006. Turbine trip and reactor trip on P-14 high steam generator level. CAR 200603734
- 4 • May 31, 2006. Main steam line steam flashing event (CAR 200604255)
- 5 • June 6, 2006. Operations personnel response to loss of switchyard Bus B and 4 kV essential Bus NB01. CAR 200604492.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples

---

---

---

---

---

---

---

---

### Assessment of What You Found

- Is it a finding, violation or not?
- Screen it through IMC 0612
  - 05.01 Screen for Performance Deficiencies
  - 05.02 Screen for Traditional Enforcement Action
  - 05.03 Screen for Greater than Minor
  - 05.04 Screen for Significance

---

---

---

---

---

---

---

---

### Screen for Performance Deficiency

- Answer the following: (Appendix B, Section 1)
  - Did the licensee fail to meet a requirement or a standard, where the cause was reasonably within the licensee's ability to foresee and correct and which should have been prevented?
- If Yes - document
- If No - Discuss with Branch Chief

---

---

---

---

---

---

---

---

### Screen for Traditional Enforcement

- Answer the following: (Appendix B, Section 2)
  - Does the issue have actual safety consequence?
  - Does the issue have the potential for impacting the NRC's ability to perform its regulatory function? For example, 50.5, 50.9, 50.59? (see Enforcement Policy IV.A.3).
  - Are there any willful aspects of the violation?

---

---

---

---

---

---

---

---

*Did licensee lie to us,  
Did licensee change tech specs  
w/out telling NRC*

*→ OI, becomes an allegation for OI*

### Screen for Greater than Minor

- Generally, Minor Violations are NOT to be documented.
  - Exceptions: When necessary to close a licensee event report or unresolved item, or if related directly to an issue of agency-wide concern (*Temporary Instruction*)

→ Tech Spec 3.1.5  
URI - close loop even if  
minor

### Screen for Greater than Minor

- Review the list of sample minor findings\* listed in Appendix E.
  - Similar as being minor - should not document.
  - Similar as being greater than minor - document
- If you can't use Appendix E, use\* Appendix B, Section 3

Ex,  $V_{MIN} = 150,000$  gallons  
calr. says 105,000 gallons

### Screen for Greater than Minor

- Answer the following: Appendix B, Section 3
  - Could the finding be reasonably viewed as a precursor to a significant event? *Operator moved fuel rods out, if not taken action*
  - If left uncorrected would the finding become a more significant safety concern? *DG inoperable for 2 days, RTR then taken out of service*
  - Does the finding relate to a performance indicator (PI) that would have caused the PI to exceed a threshold?
- (5) Does the finding relate to maintenance risk assessment
- and risk management issues?

### Screen for Greater than Minor

- Answer the following: Appendix B, Section 3
  - Could the finding be reasonably viewed as a precursor to a significant event?
  - If left uncorrected would the finding become a more significant safety concern?
  - Does the finding relate to a performance indicator (PI) that would have caused the PI to exceed a threshold?
  - Does the finding relate to maintenance risk assessment and risk management issues?

*(deliberate)*

*If licensee identified problem through a process, ~~the~~ assess problem to determine if greater than given finding*

*- Licensee stumbled upon problem (self-revealed finding)*

### Screen for Greater than Minor

- Answer the following: Appendix B, Section 3
  - Is the finding associated with one of the cornerstone attributes listed at the end of this attachment and does the finding affect the associated cornerstone objective?

---

---

---

---

---

---

---

---

---

---

**Cornerstone: REACTOR SAFETY / Mitigating Systems**

Objective: to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage)

Attributes:	Examples:
Design Control.	Initial Design and Plant Modifications
* <i>report to LER when writing inspection Rpt.</i>	Protection Against External Factors: Flood Hazard, Fire, Loss of Heat Sink, Toxic Hazard, Seismic
	Configuration Control: Shutdown Equipment Lineup, Operating Equipment Lineup.
Equipment Performance:	Availability, Reliability
Procedure Quality	Operating (Post Event) Procedure (AOPs, SOPs, EOPs); Maintenance and Testing (Prevent) Procedures
Human Performance.	Human Error (Post Event), Human Error (Prevent)

---

---

---

---

---

---

---

---

---

---

## Screen for Significance

- Risk-Informed SDP Results
  - IMC 0609 Appendices A, F, G, H and K
- Non-Risk Informed SDP Results
  - IMC 0609 Appendices B, C, D, E, I, and J
- Non-SDP Findings

---

---

---

---

---

---

---

---

## IMC 0609 - Appendices

- A - At-Power Situations (*mostly used*) - *screen for significance*
- B - Emergency Preparedness SDP
- C - Occupational Radiation Safety SDP
- D - Public Radiation Safety SDP
- E - Physical Protection SDP
- F - Fire Protection and Post-Fire Safe Shutdown SDP
- G - Shutdown Safety SDP
- H - Containment Integrity SDP
- I - Operator Requalification, Human Performance
- J - Steam Generator Tube Integrity SDP (*ISI*)
- K - Maintenance Risk Assessment and Risk Management

*SDP, Phase I refers*

---

---

---

---

---

---

---

---

## Documenting Findings

- Types of Findings:
  - NRC-identified or self-revealing findings and violations known to be Green and minor violations that require documentation
  - Findings and violations potentially greater than Green (AV)
  - Findings and violations greater than Green
- Four Part Format: an introduction, a description, an analysis, and a discussion of the enforcement related to each of the findings.

---

---

---

---

---

---

---

---

## Documenting Findings

- Introduction - overall "bottom line" results
  - one or two sentences
  - risk characterization (color or significance)
  - applicable enforcement or severity level
  
- Description - basis for the finding
  - Detail reflect safety consequence
  - Uncomplicated Green findings - succinct

---

---

---

---

---

---

---

---

**Introduction:** The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance (Green) involving the control logic of RCIC pump suction valves MO-2516 and MO-2517. These valves, in the suction piping from the torus to the RCIC pump, were designed to automatically open during a low level condition in the CST. This design, which was implemented by Design Change Request (DCR) 1040, failed to retain the remote-manual closure capability of these containment isolation valves. This remote-manual closure capability was specifically addressed in NRC correspondence.

---

---

---

---

---

---

---

---

**Description:** The team reviewed DCR 1040, "RCIC Auto-Suction Switchover from the CST to the Suppression Pool" during the inspection. This design change was implemented in response to NUREG-0737, Item II.K.3.22, "Automatic Switchover of Reactor Core Isolation Cooling System Suction." The acceptance criteria associated with this NUREG item stated, in part, "...the capability of remote manual containment isolation shall be retained." The team noted that the design change, as implemented, failed to retain this remote manual isolation capability when a low CST level signal was present.

In response to this finding, the licensee initiated CAP041114 on March 22, 2006. The licensee determined that the as-installed design was a deviation from an NRC commitment and that the condition did not result in an operability concern. As an interim measure, the licensee revised an operating procedure to allow the operators to manually block specific relay contacts in the control room, allowing these valves to be closed if required until plans to modify the valves control logic could be evaluated and implemented.

---

---

---

---

---

---

---

---

## Documenting Findings

- Analysis - determination of significance

- Performance Deficiency - *failure to retain capability of remote manual cont. isolation*
- WHY more than minor - *cornerstone affected barrier integrity*
- WHY Green (or more than Green)
- Cross-cutting aspect
  - *RCIC system + containment would have performed their safety function in event of an accident*
- Specific guidance is in IMC 0612

**Analysis:** The team determined that the failure to retain the capability of remote manual containment isolation was a performance deficiency and a finding. The team determined that the finding was more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Dispositioning Screening," because it was associated with the barrier integrity attribute of design control, which affected the barrier integrity cornerstone objective of providing reasonable assurance that physical barriers protect the public from radionuclide releases by ensuring the functionality of the primary containment. Specifically, under certain circumstances, the design change prevented the automatic and remote-manual closure of two containment isolation valves.

The team reviewed IMC 0609, "Significance Determination Process (SDP)," dated May 19, 2005, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," dated December 1, 2004. The team determined that the barrier integrity cornerstone was affected because the licensee incorrectly modified the control logic of RCIC suction isolation valves MO-2516 and MO-2517 and consequently failed to implement the design basis requirement to maintain remote manual containment isolation capability under all conditions. Because the finding did not represent an actual open pathway in the physical integrity of the reactor containment or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the reactor containment, the team determined the finding to be of very low safety significance. The basis for this conclusion was that the RCIC system and containment would have performed their safety functions in the event of an accident.

The team concluded this finding did not have a cross-cutting aspect.

*Reactor Containment degraded*

## Documenting Findings

- Enforcement - Regulatory aspects

- If no violation, state the following:
  - "No violation of regulatory requirements occurred" or "Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement."

## Documenting Findings

- Enforcement Section (continued)
  - what requirement was violated,
  - how the violation occurred,
  - when the violation occurred and how long it existed,
  - when the violation was identified,
  - safety consequence (if not described earlier)
  - root cause or apparent root cause at the time of report writing (if identified and not described earlier),
  - immediate corrective actions taken
  - specific enforcement actions (i.e., cited or non-cited)
  - tracking number resulting from the violation

---

---

---

---

---

---

---

---

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, that measures be established to assure that specific functions to be performed by a structure, system, or component of a facility are correctly translated into specifications, drawings, procedures, and instructions. The RCIC suction isolation valves MO-2516 and MO-2517 are containment isolation valves.

Contrary to the above, as of March 22, 2006, Design Change Request 1040, "RCIC Auto-Suction Switchover from the CST to the Suppression Pool" modified the control logic of MO-2516 and MO-2517 and prevented remote manual containment isolation capability from the control room under some conditions. However, because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000331/2006007-02(DRS)). The licensee entered the finding into their corrective action program as CAP041114.

---

---

---

---

---

---

---

---

## Documenting Findings

- Summary of Findings
  - First Paragraph:
    - Color/Significance
    - BRIEF description of finding
    - Enforcement
    - Who Identified
    - Corrective Actions
  - Second Paragraph:
    - BRIEF why more than minor
    - BRIEF why green
    - Cross-cutting Aspect
    - Section number

---

---

---

---

---

---

---

---

Green. The team identified a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the control logic of reactor core isolation cooling (RCIC) pump suction valves MO-2516 and MO-2517. Design Change Request 1040 modified the control logic and did not retain the remote-manual closure capability of these containment isolation valves. This remote-manual closure capability was specifically addressed in NRC correspondence. As an interim measure, the licensee revised an operating procedure to allow the operators to manually block specific relay contacts in the control room, allowing these valves to be closed if required. The licensee entered the finding into their corrective action program as CAP 041114.

The finding was more than minor because failure to retain the remote-manual closure capability of these valves was associated with the attribute of design control, which affected the barrier integrity cornerstone objective of ensuring the functionality of the primary containment isolation valves. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet. (Section 1R21.3 b2)

---

---

---

---

---

---

---

---

### "Homework"

- OJT – 5 "Documenting Inspection Findings"  
Tasks require you to walk through an inspection finding.
- In S:New-Summer Hires Training Schedule, you will see two exercises – one "easy" and one challenging.
- Complete one of the exercises...and I'll provide you comments (and sign off your ISA 20/OJT 5)

---

---

---

---

---

---

---

---