

**From:** Ann Marie Stone R3  
**To:** Adam Wilson; Andrew Bramnik; Anthony Koonce; Bradley Derrick; Christian Scott; Dariusz Szwarc; David Lords; Diana Betancourt Roldan; Frank Tran; James McGhee; Jeremy Tapp; John Bartleman; John Bozga; Kevin Barclay; Michael Jones; Nestor Feliz Adorno; Paul Zurawski; Rodney Clagg; Roger Lanksbury; Vijay Meghani  
**Date:** Wed, Oct 25, 2006 1:38 PM  
**Subject:** Re: TODAYS TRAINING SESSION

Hi folks!

As promised....."homework"!!! It's attached and in the S drive under the New -Summer hire folder. Please select one - either the straightforward or one of the challenging examples. It'll be best if you work independently on this assignment - ask if you have questions. You will not be "graded"!!!

This assignment covers the tasks from OJT-5. I presented an overview of IMC 0612 - you need to review the material from ISA 20 to complete this assignment, though.

Please complete the assignment by November 14 - I'll review and present general observations during the second meeting on November 16. I'll also provide you individual feedback and sign off on OJT-5 and ISA 20.

Thanks!  
Ann Marie

**CC:** Anne Boland; Bruce Burgess; Christine Lipa; Cynthia Pederson; Dave Passehl; David Hills; Eric Duncan; Gary Shear; Jamnes Cameron; Jeanne Atkinson; John Madera; Julio Lara; Kenneth Lambert; Kenneth O'Brien; Kenneth Riemer; Mark Ring; Mark Satorius; Patricia Pelke; Patrick Loudon; Steven Reynolds; Steven West; Thomas Kozak

A-13

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**Subject:** Re: TODAYS TRAINING SESSION  
**Creation Date** Wed, Oct 25, 2006 1:38 PM  
**From:** Ann Marie Stone  
  
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MESSAGE	1272	Wednesday, October 25, 2006 1:38 PM
Writing assignment.wpd	31682	Wednesday, October 25, 2006 1:15 PM
Challenging writing assignment.wpd		25678 Wednesday, October
25, 2006 1:20 PM		
training worksheets.wpd	4956	Wednesday, October 25, 2006 1:21 PM

**Options**

**Expiration Date:** None  
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**ReplyRequested:** No  
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Below is an excerpt from an inspection report. Use this description section to complete the Summary of Finding and the rest of Four-Part writeup.

Use the worksheets as a guide as you are writing up the sections. Also, you may want to complete the Phase 1 sheets (found in IMC 0609, Appendix A) to aid in writing the analysis section.

For the enforcement section - take a stab at the violation. We will discuss an approach to violations during the second training meeting.

Please complete this assignment by November 14 - this gives me time to review and provide feedback by November 16.

1R20 Refueling and Outage Activities (71111.20)

.1 Operator Error Involving Activity on the Wrong Unit

a. Inspection Scope

On April 25, 1999, while observing activities in the control room during the Unit 3 shutdown for refueling, the inspectors observed plant and operator response to an activity that was inadvertently performed on the wrong unit.

b. Findings

Description: During the Unit 3 shutdown for refueling, while performing actions in accordance with Windy City Operating Procedure WCOP CD/CB-4 "Condensate/Condensate Booster System Drain", Revision 15, Step E.21.a.1, an operator mistakenly closed manual valves 2CB026A and 2CB026B instead of 3CB026A and 3CB026B. These were the combined heater drain pump discharge valves, which caused a loss of about one third of the suction flow to the Unit 2 main feedwater pumps. The loss of heater drain flow could have resulted in a low suction pressure trip of the motor-driven main feedwater pump, if it had been running, and could have led to a low steam generator level reactor trip. Numerous annunciators were received in the Unit 2 control room including a low feedwater pump suction alarm. The inspectors were in the control room at the time of the event, and observed operator and plant response. Control room operators ramped power down about 30 megawatts in accordance with WCOA Sec-1, "Secondary Pump Trip Unit 2," Revision 75, in order to reduce feedwater flow demand, and operators were sent to determine the cause of the transient and reopen the valves. Heater drain flow was restored to normal and the plant was stabilized shortly thereafter.

The inspectors determined that despite several unit-specific visual indications that were available, such as color coding of procedures and components, the operator did not perform adequate self-checking to ensure that he was performing the activity on the correct unit.

Additional information:

The licensee entered the event into its corrective action system as CR 104628, "Heater Drain Flow Isolated Due To Personnel Error," April 20, 2002.

{Hint: A reactor trip is considered an initiating event.}

Below is an excerpt from a 1997 Duane Arnold inspection report. There are three violations - select one that interests you. This exercise is challenging because the information necessary to complete the analysis (and in some cases, the enforcement) section may not be included. If that's the case, feel free to add information (such as corrective action document number, immediate actions, etc.)

Use the worksheets as a guide as you are writing up the sections. Also, you may want to complete the Phase 1 sheets (found in IMC 0609, Appendix A) to aid in writing the analysis section.

For the enforcement section - take a stab writing this section. We will discuss an approach to violations during the second training meeting.

Please complete this assignment by November 14 - this gives me time to review and provide feedback by November 16.

## NOTICE OF VIOLATION

IES Utilities Inc.  
Duane Arnold Energy Center

Docket No. 50-331  
License No. DPR-49

During an NRC inspection conducted on February 4 through March 17, 1996, four violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," the violations are listed below:

1. Technical Specification 6.8.1 requires that procedures covering areas such as "normal startup and operation of systems and components of the facility" and "responses to alarms" be implemented and maintained.

Operating Instruction (OI) 149, "Residual Heat Removal System," requires pressurizing the RHR system with condensate service pressure prior to starting pumps unless otherwise directed by the Operations Shift Supervisor (OSS).

Contrary to the above, on February 19, 1997, the inspectors identified that an operator failed to follow OI 149 and did not pressurize the RHR system with condensate service pressure prior to starting an RHR pump.

This is a Severity Level IV violation (Supplement 1).

2. Criterion XI of 10 CFR Part 50, Appendix B requires, in part, that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Further, the criterion requires that test results shall be documented and evaluated to assure that test requirements have been satisfied.

Contrary to the above,

- a. The inspectors identified that from January 10, 1997 through February 7, 1997, the licensee failed to properly evaluate test results following completion of Surveillance Test Procedure (STP) 47L003, "Standby Gas Treatment System HEPA and Charcoal Filter Efficiency Tests."
- b. The inspectors identified that since April 5, 1996, STP 47L003 failed to incorporate the correct requirement for determining charcoal filter efficiency. Instead, the equation contained an error.

This is a Severity Level IV violation (Supplement 1).

3. Criterion XVI of 10 CFR Part 50, Appendix B, requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected and that measures shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition.

Contrary to the above,

- a. On March 7, 1997, the inspectors identified that corrective actions taken in response to a violation on July 23, 1997, were not adequate to preclude repetition. The inspectors identified a repeat occurrence of standby diesel generator cooling water drain valve V-32-170 being out of the required position.
- b. The inspectors identified that from February 25, 1997, until March 10, 1997, an incorrect step in Annunciator Response Procedure (ARP) 1C03B, B-4, Revision 2, was not promptly corrected. The inspectors identified the error to operations management on February 25, 1997.

This is a Severity Level IV violation (Supplement 1).

4. Part 50.59 of 10 CFR provides that the licensee may not make changes in the facility as described in the Safety Analysis Report, without prior Commission approval, unless a documented safety evaluation has been performed to ensure the change does not constitute an unreviewed safety question.

Contrary to the above, the inspectors identified that on January 31, 1997, the licensee approved UFSAR Change Request No. 96-119, which changed (lowered) the minimum room temperature for the standby liquid control equipment, without performing a safety evaluation.

This is a Severity Level IV violation (Supplement 1).

Pursuant to the provisions of 10 CFR 2.201, Duane Arnold Energy Center is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington D.C. 20555 with a copy to the U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, Illinois 60532-4351, and a copy to the NRC Resident Inspector at the Duane Arnold Energy Center within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

Dated at Lisle, Illinois  
this 23rd day of April 1997



## Report Details

### Summary of Plant Status

The plant began this inspection period at 67 percent power following a power reduction to perform maintenance on a feedwater check valve. The plant returned to full power on February 4, 1997. With the exception of a scheduled downpower evolution for control rod sequence exchange, the plant operated at approximately 100 percent power until March 14, when a plant shutdown was commenced due to increasing drywell unidentified leakage. The source of the leakage was well water from a drywell cooler. The plant was in a hot shutdown condition at the end of the inspection period.

### I. Operations

#### 01 Conduct of Operations

##### 01.1 General Comments (71707)

The inspectors conducted frequent reviews of plant operations. This included observing routine control room activities, accompanying in-plant operators on daily rounds, attending shift turnovers and crew briefings, and performing panel walkdowns. The inspectors identified examples where procedures were incorrect as written and corrective actions were ineffective. Noteworthy observations are detailed in the sections below.

##### 01.2 Licensed Operator Failed to Follow Procedure When Lining up torus Cooling Mode of RHR System

###### a. Inspection Scope

On February 19, 1997, the licensee performed STP 45D001-Q, "HPCI System Quarterly Operability Test." The inspectors observed the pre-test briefing and observed portions of the test.

###### b. Observations and Findings

Step 7.1.1 of STP 45D001-Q specifies to verify the RHR system is in Torus Cooling Mode per Operating Instruction (OI) 149. Section 5.3(3) of OI 149, "Residual Heat Removal System," specifies "unless otherwise directed by the OSS, pressurize the RHR system with condensate service prior to starting pumps per Section 10.0." The inspectors determined that the licensed operator did not pressurize the system and did not discuss with the OSS prior to starting the RHR pump. Based on interviews, the inspectors determined that the operator relied on his knowledge that the system was properly pressurized already, and therefore, there was no need to use condensate service pressure. Operations management agreed that, based on actual RHR system pressure at the time, there was no need to use the condensate service pressure. However, operations management stated that they expected the operator to obtain approval from the OSS as required by the OI. Action Request (AR) 970353 was written to document this issue.

c. Conclusions

The inspectors concluded that there were minimal safety consequences associated with the operator's actions. However, the inspectors were concerned that the operator did not follow the procedure as written. The failure to follow OI 149 is a violation of TS 6.8.1.1 (50-331/97004-01).

02 Operational Status of Facilities and Equipment

02.1 Engineered Safety Feature System Walkdowns (71707)

The inspectors used Inspection Procedure 71707 to walk down accessible portions of the following ESF systems:

- high pressure coolant injection (HPCI)
- standby diesel generators (SBDG)
- reactor core isolation cooling system (RCIC)
- residual heat removal system
- 125 Vdc and 250 Vdc batteries

Equipment operability, material condition, and housekeeping were acceptable in all cases. Several minor discrepancies were brought to the licensee's attention and were corrected. The inspectors identified a mispositioned diesel cooling water valve as discussed below.

02.2 Standby Diesel Generator (SBDG) Cooling Valve Found Mispositioned

b. Observations and Findings

On March 7, 1997, the inspectors identified that valve V-32-170 (SBDG cooling water pump suction drain) was mispositioned. The inspectors found the valve in the partially "open" position. Operating Instruction (OI) 324, "Standby Diesel Generator System," requires the valve to be closed. The inspectors verified that a second valve downstream of V-32-170 was closed and concurred with the licensee's assessment that the mispositioning did not adversely impact standby diesel generator operability.

The licensee documented the occurrence via action request (AR) 970714, closed the valve, and performed a valve line-up check of similar valves in both standby diesel generator rooms. No other valves were found mispositioned during the checks. The licensee held a fact-finding meeting to determine how the valve may have been opened. The licensee was unable to determine the cause of the mispositioning but reasoned that the valve was most likely bumped during routine oil cleanup of the standby diesel generators by the plant helper crew.

The inspectors were concerned that this was a repeat of violation 50-331/96006-01, which was identified by the NRC in July 1996. Corrective actions then included folding the handle to make inadvertent mispositioning less likely. After the occurrence on March 7, 1997, the licensee removed the handles from V-32-170 and five other similar valves in the diesel rooms.

c. Conclusions

The inspectors concluded that corrective actions following the July 1996 identification of open valve V-32-170 were ineffective. This is considered a violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," (50-331/97004-02).

03 Operations Procedures and Documentation

03.1 Incorrect Annunciator Response Procedure Not Promptly Corrected

a. Inspection Scope

During control room panel walkdowns, the inspectors observed that shutdown cooling suction pressure had been trending up over several weeks. The inspectors determined that the licensee had vented the line in January; however, pressure slowly began to increase again. The licensee suspected that certain valves were leaking by, causing the pressure to rise in the shutdown cooling line. The inspectors reviewed drawings, procedures, and operating logs.

b. Observations and Findings

On February 25, 1997, the inspectors noted that the pressure was at 85 psig. During operator shift rounds, the licensed operators discussed the pressure indication and dispatched an operator to vent the line. Annunciator Response Procedure (ARP) 1C03B, B-4, Revision 2 specified the alarm setpoint as 100 psig and provided operator actions necessary to reduce pressure in the line. The inspectors reviewed the ARP and questioned one of the steps, which directed operators to manually close a motor operated valve (MOV). The inspectors discussed the step with Operations management, who indicated that this was not a step they would want operators to perform, based on past problems with manually seating MOVs.

A week later, the inspectors reviewed the procedure and found that the correction had not been made. When the inspectors asked Operations Management what they would expect operators to do if the alarm came in, the answer was that operators would be expected to change the procedure at the time the alarm came in with a Document Change Form. A Procedure Work Request was initiated on February 25, at the time the inspectors identified the procedure problem, however, this did not ensure timely correction of the procedure. The procedure was finally corrected on March 10, 1997.

c. Conclusions

The licensee initiated work requests to repair the leaking valves. The inspectors were concerned that the procedure was not revised promptly when the problem was identified. Criterion XVI of 10 CFR 50 Appendix B required that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. The failure to correct the ARP in a timely manner is considered a violation. (50-331/97004-03).

## LIST OF ACRONYMS USED

ACP	Administrative Control Procedure
ARP	Annunciator Response Procedure
CFR	Code of Federal Regulations
CMAR	Corrective Maintenance Action Request
DAEC	Duane Arnold Energy Center
HPCI	High Pressure Coolant Injection
IR	Inspection report
LCO	Limiting Condition for Operation
LER	Licensee Event Report
MD	Maintenance Directive
MOV	Motor operated valve
NCV	Non-cited violation
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OI	Operating Instruction
OSS	Operations Shift Supervisor
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RHR	Residual heat removal
RPS	Reactor protection system
RPT	Recirculation pump trip
RRMG	Reactor recirculation motor generator
SAR	Safety analysis report
SBDG	Standby diesel generator
SBGT	Standby gas treatment system
SEAR	Safety evaluation applicability review
SLC	Standby liquid control
STP	Surveillance Test Procedure
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

### Worksheets for Writing Inspection Report Inputs

1. Using the attached description of a finding, develop an analysis section. Consider answering the following questions while developing your writeup:
  - a. What is the performance deficiency?
  - b. Is this issue more than minor? How did you make that determination? What criteria did you use?
  - c. How did you evaluate that the finding is Green? Did you use an SDP or management review? What cornerstone is affected? How did you reach your conclusion?
  - d. Does the finding have to a cross-cutting aspect? State specifically how it affects a cross-cutting issue.
  - e. Create your analysis section:

2. Using the attached description of a finding, develop an Summary of Findings section. Consider answering the following questions while developing your writeup:
  - a. What was the final color?
  - b. Who identified the finding? Did the finding have an associated violation?
  - c. What were the immediate corrective actions? (Did the licensee correct the problem, evaluate it away, justify continued operation until they can fix it, etc.?)
  - d. Brief summary of the analysis section - why is it more than minor? How did it screen out as Green?
  - e. Create your Summary of Findings section.