pillsbury

Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, NW | Washington, DC 20037-1122 | tel 202.663.8000 | fax 202.663.8007

Daryl M. Shapiro
Phone: 202.663.8507
daryl.shapiro@pillsburylaw.com

Confidential Information Submitted Under 10 C.F.R. § 2.390

January 6, 2011

Mr. Mohan C. Thadani
Senior Project Manager
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
One White Flint North, 8 G14
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: Ameren Missouri Response to September 17, 2010 10 C.F.R. § 2.206 Petition, Filed by Lawrence S. Criscione

Dear Mr. Thadani:

Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri") submits to the Nuclear Regulatory Commission ("NRC") Petition Review Board ("PRB") this written response to the petition filed by Mr. Lawrence S. Criscione on September 17, 2010 ("Petition") concerning an event at the Callaway Nuclear Generating Station ("Callaway") on October 21, 2003.

The NRC should not accept the Petition for any action under 10 C.F.R. § 2.206. This letter will not address the merits of the allegations contained in the Petition, other than to say that they are unfounded. Rather, Ameren Missouri's position is that, because the NRC has previously investigated and evaluated Mr. Criscione's allegations multiple times, and the Petition specifically states that "there are no new allegations present" in the Petition (Petition at 1), the NRC should not accept the Petition for further action under 10 C.F.R. § 2.206.

B-1

ADD1 NRR 03

I. NRC Criteria for Rejecting 10 C.F.R. § 2.206 Petitions

NRC Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions" (Oct. 25, 2000) ("Management Directive 8.11") provides several criteria for rejecting a petition requesting agency action under 10 C.F.R. § 2.206. One such criterion states that,

> The staff will not review a petition under 10 C.F.R. 2.206, whether specifically cited or not, under the following circumstances . . . . The *petitioner raises issues that have already been the subject of NRC staff review and evaluation* either on that facility, other similar facilities, or on a generic basis, for which a resolution has been achieved, the issues have been resolved, and the resolution is applicable to the facility in question. This would include requests to reconsider or reopen a previous enforcement action (including a decision not to initiate an enforcement action) or a director's decision. *These requests will not be treated as a 2.206 petition unless they present significant new information.*

Management Directive 8.11 at 11-12 (emphases added). In other words, the NRC will not accept a petition for further action under Section 2.206 if (1) the issues raised in the petition have already been reviewed or evaluated by the NRC Staff; and (2) the petition does not raise significant new information. Both circumstances apply here. Therefore, the NRC should reject Mr. Criscione's Petition for further action under Section 2.206.

II. The NRC Has Already Evaluated and Addressed the Concerns Raised in the Petition

Mr. Criscione has been pursuing his allegations regarding the October 21, 2003 event for over three and a half years. The NRC has evaluated and addressed his concerns on multiple occasions. Where the NRC did substantiate a concern, it found it to be of very low safety significance. Otherwise, the NRC investigated, but did not substantiate, the concerns.

Mr. Criscione first raised his concerns to the NRC regarding the October 21, 2003 event in March 2007. Allegation Review Board ("ARB") Summary March 19, 2007 (Attachment 1).[1] The ARB considered the concerns that Mr. Criscione raised, and

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[1] The first concern Mr. Criscione raised states:

followed up with him to obtain clarifying information. ARB Summary April 9, 2007 (Attachment 2) at 4. By letter dated April 20, 2007, Mr. Criscione submitted additional information to the NRC further clarifying his issues (Attachment 3). During an inspection of Callaway in April 2007, the NRC Staff substantiated Concern 1 and partially substantiated Concern 2. ARB Summary June 18, 2007 (Attachment 4). For Concern 1, the NRC determined that the issue amounted to "more than a minor violation as it would be an initiating events precursor" and stated that Concern 1 would be documented in a forthcoming inspection report. ARB Summary June 18, 2007 at 3. Concern 2, though partially substantiated, would not be documented as there was no applicable regulatory requirement. Id.

On August 2, 2007, the NRC issued Integrated Inspection Report No. 05000483/2007003 for Callaway (Attachment 5) ("Inspection Report"). As indicated in the ARB Summary June 18, 2007, the Inspection Report documented the October 21, 2003 event and the substantiated Concern 1. Inspection Report, Enclosure 1 at 35. The NRC concluded, however, that this "finding is of *very low safety significance* because the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigating equipment or functions will not be available." Id. at 35-36 (emphasis added). In addition, the NRC noted that Ameren Missouri's "corrective action program has now addressed the plant operation issues." Id. at 36.

> On October [21], 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. At the time, the condition report was assigned a significance level 4. The concerned individual ("CI") expressed concern that this significance was too low. The condition also was not documented in the shift supervisor log.

ARB Summary March 19, 2007 at 2 ("Concern 1"). The second concern raised by Mr. Criscione states:

> The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. The CI believes this delay may have been intentional to avoid scrutiny of crews actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. The CI states that purposefully delaying inserting the control rods, not logging entry into Technical Specifications and not documenting significant operational transients in the corrective action program are dishonest and negligent omissions.

Id. ("Concern 2").

By letter dated August 7, 2007, the NRC wrote to Mr. Criscione describing the resolution of his concerns (Attachment 6). A report enclosed with the letter indicated that the NRC had substantiated Concern 1 and would document the violation in an inspection report, and had partially substantiated Concern 2. The letter stated that, "[u]nless the NRC receives additional information that suggests that our conclusions should be altered, we plan no further action and we consider this case closed."

Apparently dissatisfied with this result, Mr. Criscione submitted a rebuttal letter to the NRC in late August 2007. ARB Summary September 27, 2007 (Attachment 7). As a result, the NRC Office of Investigations ("OI") opened an investigation into Mr. Criscione's (now-clarified) claims. Id. at 2. The investigation was initiated "to determine if control room personnel at [Callaway] willfully failed to document a temperature transient that occurred on October 21, 2003." Report of Investigation Case No. 4-2007-049, May 9, 2008 ("OI Report") (Attachment 8) at 1.

The OI investigation ultimately concluded that the allegation was not substantiated. This conclusion was based on the testimony of one dozen witnesses, OI Report at 5; three dozen exhibits, id. at 17-19; and the results of the investigation performed by the Callaway Employee Concerns Program, id. at 15.

By later dated April 20, 2010, the NRC informed Callaway Missouri that the allegations were not substantiated and that the "NRC plans no further action related to the willful aspects of the allegation and considers the investigation closed" (Attachment 9). Presumably, the NRC required nearly two years to close out the investigation into unsubstantiated allegations in order to ensure that it had carefully evaluated and addressed the concerns raised by Mr. Criscione.[2]

III. Conclusion

Other than the evaluations and investigations described herein, Ameren Missouri is not aware of any other examples of the NRC investigating or otherwise substantively evaluating the allegations raised by Mr. Criscione concerning the October 21, 2003 event, though it is possible that the NRC has conducted such activities.[3] In any event,

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[2] Indeed, attached to the Petition is a June 26, 2009 letter from Mr. Criscione to the NRC providing Mr. Criscione's "assessment" of the October 21, 2003 event "from a review of OTO-NN-00001," the Callaway procedure for "off-normal" operation. Mr. Criscione included the June 26, 2009 letter with the Petition "for reference." Petition at 25.

[3] In April 2010, Mr. Criscione submitted two Section 2.206 petition requests related to the October 21, 2003 event. However, by letter dated May 27, 2010, the NRC informed Mr. Criscione that it would not accept the petitions for further action under Section 2.206 because he "did not ask for NRC to take any enforcement action against the licensee, as required by the NRC's Management Directive (MD) 8.11."

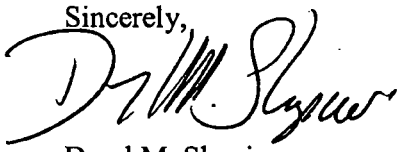
Ameren Missouri believes that the NRC has provided every opportunity for Mr. Criscione to present and (on multiple occasions) clarify his allegations, fully vetted those allegations, and has appropriately addressed them.

Thus, the Petition concerns allegations that have already been reviewed by the NRC Staff. Moreover, Mr. Criscione's request that the NRC "properly investigate[]" the October 21, 2003 event (Petition at 1), is further belied by the fact that the Petition contains "no new allegations" and acknowledges that "all allegations have been document by Region IV." Petition at 1.

Accordingly, consistent with the direction provided in Management Directive 8.11 that the NRC will not review a petition under Section 2.206 where the allegations have already been the subject of NRC Staff review and present no significant new information, the NRC should reject the Petition for further action under Section 2.206.

One more comment must be made with respect to the Petition. In the Petition, Mr. Criscione uses the first-person "we" to refer to himself and the NRC collectively. Petition at 2. This makes it appear that the Petition was an official NRC communication concerning Callaway and its personnel. Ameren Missouri would like to reiterate and confirm the understanding it has with the NRC that Mr. Criscione's official NRC duties and responsibilities will not involve any matters with respect to Callaway.

Sincerely,



Daryl M. Shapiro
Counsel for Ameren Missouri

Enclosures: As stated

ATTACHMENT 1

ARB SUMMARY		Responsible Branch	RPBB	RIV-2007-A-0028
Facility Name	Callaway	ARB Date:	March 19, 2007	
Docket Number	050-483	OI Case No.:		
ARB DECISION				
Purpose of ARB	Initial			
Previous Decisions	N/A			
Today's Decision	Concern 1- RPBB to inspect. Concern 2- RPBB to inspect non-willful aspects and identify any potential violations. Re-ARB to discuss OI followup of potential willfulness. Concerns 3-6, ACES/RPBB/EB2- to contact alleger, regarding objection to referral and to get clarification regarding concerns.			
Basis for Another ARB				
REFERRAL				
Refer to:		Criteria Reviewed?		
Referral Rationale				
OI INVESTIGATION				
Priority Rationale				
DOL Deferral Rationale				
ARB PARTICIPANTS (* denotes ARB Chairman Approval)				
JWalker	HFreeman	KFuller	MVasquez	SGraves
RCaniano	AVegel*	DWhite	VGaddy	MShannon

B/1

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 7C
FOIA- 2008-0011

CONCERNS LIST				RIV-2007-A-0028
Concern (Brief Statement)				Regulatory Requirement
Branch	Action (Inspect, Refer, Investigate, No Action)	Planned Completion	Significance (High, Normal)	OI Priority (H, N, L)
1	On October 23, 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. At the time the condition report was assigned a significance level 4. The concern individual (CI) expressed concern that this significance level was too low. The condition also was not documented in the shift supervisor log.			Criterion V, TSs
RPBB	Inspect	5/19/07	N	N
2	The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. The CI believes this delay may have been intentional to avoid scrutiny of crews actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. The CI states that purposefully delaying inserting the control rods, not logging entry into Technical Specifications and not documenting significant operational transients in the corrective action program are dishonest and negligent omissions.			Wrong doing (50.5), Criterion V/TSs
RPBB	Inspect		N	N
3	Based on past history, the CI is unimpressed with the ability of the ECP to pursue issues. The CI views the Callaway ECP as merely a program to placate employees who have indicated they have concerns they intend to address with the NRC. The CI has no confidence that the ECP will appropriately address this issue			SCWE
ACES RPBB/ EB2	Contact alleger		N	N
4	The CI had unfavorable dealing in the past with senior management (b)(7)c and feels uncomfortable addressing these concerns with his management.			SCWE
ACES RPBB/ EB2	Contact alleger		N	N

CONCERNS LIST				RIV-2007-A-0028
Concern (Brief Statement)				Regulatory Requirement
Branch	Action (Inspect, Refer, Investigate, No Action)	Planned Completion	Significance (High, Normal)	OI Priority (H, N, L)
5 The CI has no confidence that anyone in Callaway's corrective action program has the interrogation skills to competently conduct interviews with the involved individuals.				SCWE
ACES RPBB/ EB2	Contact alleger		N	N
6 The CI does not believe, the (b)(7)c (b)(7)c will adequately investigate this concern due his relationship with (b)(7)c				SCWE
ACES RPBB/ EB2	Contact alleger		N	N

Revised 5/22/02

ALLEGATION RECEIPT FORM

Received By:	Michael Peck	Receipt Date:	March 2, 2007
Receipt Method (meeting, phone call, letter, etc.)		Resident Office drop in/letter	

FACILITY

Facility Name	Callaway Plant
Location	Fulton, MO
Docket(s)	05000483

CONCERN

Summary the of Concerns (be brief)

1. Unnecessary delay completing a Technical Specification required Shutdown (see attached letter).
2. Failure to document a significant operational transient (see attached letter).
3. Less than adequate safety culture (see attached letter).

Obtain concern specifics. What is the concern, when did it occur, who was involved, etc. If the concern involves discrimination, fill in the last section of the form.

Please see attached letter.

What is the potential safety impact? Is this an ongoing concern?

Indication of poor plant safety culture.
Problems with Corrective Action and Employee Concerns Program.

What requirement/regulation governs this concern?

10 CFR 50, Appendix B, Criteria XVI and Plant Technical Specifications (Mode)

What records should the NRC review?

CARs 2007012798& 200308555, plant computer data from October 21, 2003

What other individuals could the NRC contact for information?

Duff Bottorf and Glen Pruitt

How did the individual find out about the concern?

Review of a condition adverse to quality record.

Was the concern brought to management's attention? If so, what actions have been taken, if not, why not?

Yes- Entered into the Corrective Action Program as "Level 4" CAR (trend only)

Why was the concern brought to the NRC's attention?

The concerned individual has lost confidence in Corrective Action and Employee Concerns Programs.

ALLEGATION RECEIPT FORM

ALLEGER INFORMATION

Full Name	*[Redacted]*	Employer	AmerenUE
Mailing Address (Home)	*[Redacted]*	Occupation	Engineer
Telephone (Daytime) (Home) (Other)	*[Redacted]*	Relationship to facility	Employee
Preference for method and time of contact	Phone/mail	Was the individual advised of identity protection	Yes
Referral	Explain that if the concerns are referred to the licensee, that alleger's identity will not be revealed and that the NRC will review and evaluate the thoroughness and adequacy of the licensee's response. If the concerns are an agreement state issue or the jurisdiction of another agency, explain that we will refer the concern to the appropriate agency, and if the alleger agrees, we will provide the alleger's identity for followup.		
Does the individual object to the referral?	Yes	Does the individual object to releasing their identity?	No

Regulations prohibit NRC licensees (including contractors and subcontractors) from discriminating against individuals who engage in protected activities (alleging violations of regulatory requirements, refusing to engage in practices made unlawful by statues, etc.).

Does the concern involve discrimination?	No	Was the individual advised of the DOL process?	Yes

What was the protected activity?

Review of a condition adverse to quality record.

What adverse actions have been taken? When?

None

Why does the individual believe the actions were taken as a result of engaging in a protected activity?

N/A

Revised 9/3/03

March 1, 2007

[redacted]

Mr. Michael Peck
Senior Resident Inspector
Nuclear Regulatory Commission

Mr. Peck:

On October 21, 2003 Callaway Plant was shutting down to MODE 3 to comply with T/S 3.8.7. At approximately 0938, with the plant in MODE 1, 8% power, a secondary plant transient began when the Turbine and MSR Drains were opened per OTN-AC-00001. This transient lasted approximately 25 minutes and resulted in RCS temperature dropping below the Minimum Temperature for Critical Operation for approximately 10 minutes between 1000 and 1013. The resulting pressurizer level transient caused a letdown isolation and entry into OTO-BG-00001. Note the following:

- The cause of the temperature transient was not captured in the Callaway Action Request System on the day the event occurred. The event was eventually documented in the Callaway Action Request System 38 days later by an Engineering Training Instructor (Vincent "Duff" Bottorf) as Adverse Condition 200308555. This training instructor stated to me that the Shift Supervisor for the event was very defensive about the event and did not want the issue documented with a CAR.

- There is no record in the Shift Supervisor Log nor in the Callaway Action Request System of passing below the Minimum Temperature for Critical Operation or of entering T/S 3.4.2.

At 1013 the turbine was tripped and the crew logged entry into MODE 2; Delta T Power was 4.9%, Tavg was 552°F, IRNI power was 1.4E-5 ica and SUR was -0.01 dpm. One minute later (1014) Delta T Power was 4%, Tavg was 555°F, IRNI power was 1E-5 ica and SUR was -0.16 dpm. The 3°F temperature rise resulted in a negative reactivity insertion which caused the reactor to shutdown. At 1018, OTO-BG-00001 was exited; Delta T power was 2.4%, Tavg was 557°F, IRNI power was 2.4E-6 ica and SUR was -0.16 dpm.

By 1025 Delta T power was approximately stable, indicating reactor power had lowered below the Point of Adding Heat; Delta T power was 1.8%, Tavg was 560°F, IRNI power was 7.34E-8 ica and SUR was -0.28 dpm. By the time 1E-8 ica was reached (1028) the maximum negative start up rate (for the transient) of -0.29 dpm had already been reached; Delta T Power was 1.8%, Tavg was 560°F. By 1046 reactor power was approximately stable (power would drop less than half a decade in the next 75 minutes) at 6.22E-11 ica. At 1125 the Channel 2 SRNI energized, reading 3044 cps and at 1138 the Channel 1 SRNI energizes reading 2593 cps. Control Rods were not inserted until 1204.

RIV-2007-A-0028

There is no indication in the control room log as to what prevented control rod insertion in the 106 minutes between exiting OTO-BG-00001 and finally beginning control rod insertion. There is a log entry at 1137 for exiting OTO-NN-00001. OTO-NN-00001 had been entered earlier in the shift due to problems with inverter NN11. It is unlikely the remaining actions of OTO–NN–00001 were distracting the crew from inserting control rods. Several routine entries were being made during this time period such as starting and completing I&C surveillances or starting and stopping secondary plant equipment.

(b)(7)c with Mr. Bradley, Mr. Ganz, Mr. Weekley and Mr. Olmstead regarding what activities might possibly delay inserting the control rods for over 90 minutes. None of these Shift Managers could think of any evolution which would delay inserting the control rods. All of these individuals did state, in some manner, that they could not evaluate whether or not the delay was appropriate without knowing what all was occurring on shift that day. I have not spoken with any of the crew members on shift at the time (Lantz, Rauch or Alderman). The Reactor Operator is deceased.

At the time the reactor shutdown (it was unrecoverable by 1025) the crew was supposed to be maintaining MODE 2 in the event NN11 was repaired and a shutdown was not necessary. It appears the control rods remained out because the crew did not want the Outage Control Center to know they had lost control of reactor power.

It is not my intent to allege that reactor safety was violated on October 21, 2003. Nor is it my intent to allege that plant operating procedures were not followed. Note the following:

- After the reactor shut down because of the negative reactivity inserted by the +3°F upon tripping the turbine, the reactor was in a stable condition.
- Although shutdown margin was not yet met, negative reactivity was increasing the entire time due to Xenon buildup and the control and shutdown banks were trippable in the event of a transient induced positive reactivity insertion.
- Although all the steps of OTG-ZZ-00005 prior to the step for inserting "control rod banks into the core" implicitly assume the reactor is still critical and although some steps of OTG-ZZ-00005 were not performed (e.g. taking 1E-8 data), there was no explicit deviation from plant operating procedures.

Based on my personal experience with the individuals involved, it appears to me there was an intentional 90 minute delay in inserting control rods to avoid scrutiny of the crew's actions. Purposefully delaying insertion of the control banks, not logging entry into T/S 3.4.2 and not documenting significant operational transients in the Corrective Action Program are dishonest and negligent omissions. This behavior is contrary to the cornerstone of Problem Identification and Resolution.

RIV-2007-A-0028

I am not certain the above events rise to a level which warrant NRC investigation since nuclear safety does not appear to have been in jeopardy. If they do, I would like the NRC to investigate these events as I am not capable of investigating them further. Note the following:

- The events were documented as part of CARS 200701278. The specific allegation above was not as strongly stated in CARS 200701278. At the time CARS 200701278 was written, I was unaware of Mr. Bottorf's problems in getting CARS 200308555 documented.

- CARS 200701278 was screened as a Sig 4 (Corrective Action Only) meaning the Lead Responder need not investigate anything – his task is merely to develop corrective actions to improve our poor performance of MODE 2 operations. At the CARS Screening Committee meeting which assigned this significance level, I expressed my concern that the events of the 2003 NN11 outage needed additional investigation.

- I do not have a good relationship with (b)(7)c and I do not feel comfortable interviewing him concerning these events.

- (b)(7)c Due to his personal relationship with (b)(7)c I do not feel confident (b)(7)c would give this matter a fair investigation.

- I have consulted the Employee Concerns Program at Callaway Plant (b)(7)c in the past (on separate issues) and was unimpressed with their performance and their pursuit of the issues. I view the ECP process at Callaway as merely a program to placate employees who have indicated they have concerns which they intend to address with the NRC and have no confidence they would appropriately address this issue.

- I have no reason to doubt the integrity of the Plant Manager, Mr. Diya, and the Site Vice President, Mr. Heflin. However, I have had unfavorable dealings in the past with their (b)(7)c For this reason, I do not feel comfortable addressing these concerns with my management above Operations.

- Finally, I have no confidence that anyone in the Callaway Corrective Action Program has the requisite interrogation skills to competently conduct the interviews with the involved individuals.

I can be reached away from the plant at [redacted] Duff Bottorf is unaware I am bringing this allegation to you. If you wish to contact him, he can be reached at [redacted]. Glen Pruitt was the Shift Engineer for the NN11 shutdown. He is unaware I am bringing this allegation to you. If you wish to contact him, he can be reached at [redacted]

Very respectfully,

[redacted]

RIV-2007-A-0028

ATTACHMENT 2

ARB SUMMARY		Responsible Branch	RPBB	RIV-2007-A-0028
Facility Name	Callaway	ARB Date:	April 9, 2007	
Docket Number	050-483	OI Case No.:		
ARB DECISION				
Purpose of ARB	Discuss clarification of concerns and new potential discrimination.			
Previous Decisions	Concern 1- RPBB to inspect. Concern 2- RPBB to inspect non-willful aspects and identify any potential violations. Re-ARB to discuss OI followup of potential willfulness. Concerns 3-6, ACES/RPBB/EB2- to contact alleger, regarding objection to referral and to get clarification regarding concerns.			
Today's Decision	Concern 3- RPBB to inspect. Concern 4- ACES to offer early ADR, if ADR fails, OI to investigate high priority.			
Basis for Another ARB				
REFERRAL				
Refer to:		Criteria Reviewed?		
Referral Rationale				
OI INVESTIGATION				
Priority Rationale	High- Level of management involved			
DOL Deferral Rationale				
ARB PARTICIPANTS (* denotes ARB Chairman Approval)				
JWalker	HFreeman	KFuller	MHaire	AHowell*
DWhite	FBrush	RCaniano	KClayton	

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 7C
FOIA-2008-0011

B/8

CONCERNS LIST				RIV-2007-A-0028
Concern (Brief Statement)				Regulatory Requirement
Branch	Action (Inspect, Refer, Investigate, No Action)	Planned Completion	Significance (High, Normal)	OI Priority (H, N, L)
1 On October 23, 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. At the time the condition report was assigned a significance level 4. The concern individual (CI) expressed concern that this significance level was too low. The condition also was not documented in the shift supervisor log.				Criterion V, TSs
RPBB	Inspect	5/19/07	N	N
2 The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. The CI believes this delay may have been intentional to avoid scrutiny of crews actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. The CI states that purposefully delaying inserting the control rods, not logging entry into Technical Specifications and not documenting significant operational transients in the corrective action program are dishonest and negligent omissions.				Criterion V, TSs
RPBB	Inspect		N	N
3 The licensee does not have a healthy SCWE. The environment for raising concerns was poor for three events [October 2003 below RCS Minimum Temperature for Critical Operation, June 2005 slow to isolate SI accumulator during shutdown transient, August 2005 slow to isolate SI accumulator during shutdown for ESW pin hole leak down power]. As a result problems were not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs.				SCWE
RPBB	Inspect		N	N
4 Alleger claims discrimination for having raised safety concerns in the form of having his SRO license terminated.				10 CFR 50.7
ACES	Offer Early ADR		N	N

Revised 5/22/02

EARLY ADR CHECKLIST
Allegation No. RIV-2007-A-0028

The NRC's ADR Pilot Program requires the ARB to determine whether an individual has made a prima facie case of discrimination before early ADR is offered to the individual.

The following checklist should be used in presenting early ADR recommendations to the ARB. ACES should work with Regional Counsel, as necessary, in collecting the necessary information from the alleger and in making recommendations to the ARB.

Answer the following questions based solely on the information provided by the individual making the assertions. No independent investigation should be done to determine the veracity of the statements.

1. Did the individual engage in protected activity (i.e., raise nuclear safety concerns or any concern that may impact anything that is under NRC jurisdiction)? Yes

   If so, how? In 2005, the alleger raised and pushed an issue regarding clarification of isolating the SI accumulators.

2. Was management aware of the protected activity? Yes

   If so, how did management become aware? He raised the issue to his management, the CAP, the ECP, and to senior management.

3. Was the individual subjected to adverse action? Yes

   If so, what was it? The licensee terminated the alleger's SRO license in June 2006.

4. Is there an inference that the adverse action was taken because of protected activity? Yes

   If so, how are they connected? The alleger believes that the licensee terminated his SRO license because he raise the and pushed for resolution of the SI accumulator isolation issue. Alleger had been issued the SRO licensee only 2 years earlier.

From: Harry Freeman
To: R4ALLEGATION
Date: 3/30/2007 10:27:47 AM
Subject: 07028 Phone Call With Alleger 072907

On March 29, 2007, Linda Smith, Vincent Gaddy and I contacted the alleger to clarify his SCWE concerns. The following provides clarifying information regarding his concerns.

The alleger described an issue he raised in 2005 regarding a statement in the FSAR that indicates that at approximately 425 F and 1000 pounds, that the SI accumulators would be isolated. Apparently, the corrective action process took a long time to address this issue and the ECP program was of little help coming to resolution. The issue was eventually resolved and the NRC does not need to address the technical aspects of the issue.

The alleger claimed discrimination for having raised safety concerns related to the SI accumulator issue above. The licensee advised the NRC that this individual and 2 others did not need to maintain their SRO licensee in August 2006. The alleger believes that the reason he lost his license was at least in part because he kept pushing to have his SI accumulator issue addressed. He stated that the other two individuals received better bonus (?) than he did and it was only after he complained to the ECP (that he was being subjected to discrimination) that the license decided to offer him the same bonus. The alleger still wanted the ECP to investigate why his license was removed but they did not conduct any investigation.

Regarding the October 2003 shutdown issue, the alleger believes that there should have been a lessons learned on the issue, which could have prevented a similar June 2005 shutdown transient but that because of the personal relationship that (b)(7)c has with (b)(7)c that he has not and will not perform an adequate investigation. 1C
The alleger stated that he did not believe that the actions taken at the time violated TS or jeopardized plant safety.

He clarified his SCWE concern as follows. The environment for raising concerns was poor for three events [October 2003 below RCS Minimum Temperature for Critical Operation, June 2005 slow to isolate SI accumulator during shutdown transient, August 2005 slow to isolate SI accumulator during shutdown for ESW pin hole leak down power]. As a result problems were not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs. The concerned individual planned to provide a copy of CAR 2007 0 1278 to the resident inspectors. This CAR documented a review of 9 reactor shutdowns for similar issues.

The alleger did not object to referral of his issues to the licensee by the NRC.

ATTACHMENT 3

April 20, 2007

(b)(7)c [redacted]

RECEIVED
APR 26 2007

Harry A. Freeman
Senior Allegation Coordinator
Nuclear Regulatory Commission
Region IV

Mr. Freeman:

Below is my clarification of the concerns from Allegation RIV-2007-A-0028.

For Concern 1:
On October 23, 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. This condition report did not address why the control rods were not inserted until 90 minutes following the reactor shutting down. A later condition report documenting the issue (CARS (b)(7)c [redacted] was assigned a significance level 4. The concern individual (CI) expressed concern that this significance level was too low. The condition also was not documented in the shift supervisor log.

[The fourth and fifth sentences above were true on March 2, 2007 but are no longer true. On March 20, 2007 I presented (b)(7)c [redacted] to the Reactivity Management Review Committee. The next day, a (b)(7)c [redacted] wrote two training requests and two Adverse Condition CARS from data I presented at the RMRC. In response to (b)(7)c [redacted] CARS, CARS (b)(7)c [redacted] was re-screened as a significance level 3 on March 21, however no investigation has yet occurred.]

For Concern 2:
This is accurate as written.

For Concern 3:
The licensee does not have a healthy SCWE. The environment for raising concerns was poor for an issue brought forward in May 2005 concerning when the FSAR requires the isolation of the Safety Injection Accumulators. The problem was not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs. Action was only take after the concern individual (CI) stated he was planning to address the issue with the NRC.

(b)(7)c [redacted] One was in May 2005. The issue raised was that we were slow to isolate the SI Accumulators all four times the plant was cooled down to MODE 4 between RF12 and RF13 AND, after

Information in this record was deleted in accordance with the Freedom of Information Act. Exemptions 7C
FOIA/PA 2009-0042

identifying this in CARS (b)(7)c In February 2005, we were again slow to isolate Safety Injection Accumulators during the March 2005 shutdown to repair the ESW pin hole leak.

(b)(7)c was in (b)(7)c and pertained to me having my (b)(7)c I would prefer that this second issue not be included in Concern 3. I do know other people at Callaway Plant who have been dissatisfied with the Employee Concerns Program if you need more than one example to make the case for the last sentence of Concern 3.]

For Concern 4:
This concern is accurate as written. However, I would prefer that Concern 4 not be investigated at this time. Later this year (b)(7)c (b)(7)c (b)(7)c I still feel I am being discriminated against, I will bring Concern 4 to the NRC at that time.

If you have any questions, please call me at (b)(7)c

Very respectfully,

(b)(7)c

ATTACHMENT 4

ARB SUMMARY		Responsible Branch	RPBB	RIV-2007-A-0028
Facility Name	Callaway	ARB Date:	June 18, 2007	
Docket Number	050-483	OI Case No.:		
ARB DECISION				
Purpose of ARB	Discuss follow-up for potential willfulness.			
Previous Decisions	Concern 3- RPBB to inspect. Concern 4- ACES to offer early ADR, if ADR fails, OI to investigate high priority.			
Today's Decision	Based upon discussion with the inspector(s) conducting review of the technical issue of Concern 2, the ARB did not find evidence of willful misconduct. In addition, the ARB concluded that there was no violation of regulatory requirements to warrant an OI Investigation. RPBB to document review of issue more fully including whether failure to log entry into TS 3.4.2 or time to document issue in CAR violated an NRC requirement.			
Basis for Another ARB	If review finds that there were violation(s) of NRC requirements.			
REFERRAL				
Refer to:		Criteria Reviewed?		
Referral Rationale				
OI INVESTIGATION				
Priority Rationale	High- Level of management involved			
DOL Deferral Rationale				
ARB PARTICIPANTS (* denotes ARB Chairman Approval)				
AVegel	WBJones	DWhite		KClayton
GMVasquez	HAFreeman	KDFuller	FBrush	

All

CONCERNS LIST				RIV-2007-A-0028
Concern (Brief Statement)				Regulatory Requirement
Branch	Action (Inspect, Refer, Investigate, No Action)	Planned Completion	Significance (High, Normal)	OI Priority (H, N, L)
1 On October 23, 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. At the time the condition report was assigned a significance level 4. The concern individual (CI) expressed concern that this significance level was too low. The condition also was not documented in the shift supervisor log.				Criterion V, TSs
RPBB	Inspect	5/19/07	N	N
2 The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. The CI believes this delay may have been intentional to avoid scrutiny of crews actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. The CI states that purposefully delaying inserting the control rods, not logging entry into Technical Specifications and not documenting significant operational transients in the corrective action program are dishonest and negligent omissions.				Criterion V, TSs
RPBB	Inspect		N	N
3 The licensee does not have a healthy SCWE. The environment for raising concerns was poor for three events [October 2003 below RCS Minimum Temperature for Critical Operation, June 2005 slow to isolate SI accumulator during shutdown transient, August 2005 slow to isolate SI accumulator during shutdown for ESW pin hole leak down power]. As a result problems were not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs.				SCWE
RPBB	Inspect		N	N
4 Alleger claims discrimination for having raised safety concerns in the form of having his SRO license terminated.				10 CFR 50.7
ACES	Offer Early ADR		N	N

Revised 5/22/02

June 7, 2007

MEMORANDUM TO: Harry Freeman, Senior Allegations Coordinator

FROM : Vincent Gaddy, Chief, Projects Branch B, Division Reactor Projects, Region IV

SUBJECT: ALLEGATION RIV- 2007-A-0028 CLOSURE MEMO

This memorandum provides information to address the alleger's concerns regarding the subject allegation. The NRC has completed its follow-up and inspection of these concerns. The enclosed "Resolution of Concerns" documents the concerns and summarizes the NRC resolution. The NRC performed an onsite inspection between the dates of April 5, 2007 to April 30, 2007. Both concerns were substantiated. However Concern Number 1 was determined to be a more than minor violation as it would be an initiating events precursor. The NRC plans to document this violation in NRC Inspection Report 2007-003. Although Concern 2 was substantiated, it will not be documented since there is no regulatory requirement.

Unless the NRC receives additional information that suggests that these conclusions should be altered, Branch B plans no further action and considers these concerns closed.

Resolution of Concerns

Concern 1:
On October 23, 2003, the RCS temperature dropped below the minimum temperature for critical operation. This was not documented in a condition report for 38 days. Once documented the condition report assigned significance level 4 was too low.

Resolution 1:
As a result of the inspection, this concern was substantiated. The NRC reviewed computer point trend data, operator logs, Technical Specification requirements, corrective action documents and operator procedural guidance.

The October 23, 2003, plant transient resulted in RCS temperature decreasing approximately 2 degrees F. below the Technical Specification 3.4.2 minimum allowed RCS temperature while critical. Fifteen minutes late a mode change from Mode 2 (Startup) to Mode 3 (Hot Standby) occurred. This Technical Specification limiting condition for operation entry and mode change were not documented per requirements. The operators procedural guidance expected to be able to control RCS temperature and reactor power stable using control of steam loads to establish a reactor critical condition of about 5 E -6 amps. The reactor did become subcritical without immediate operator action and did transition through five decades of power decrease due to the transient in a 20 minute period. No attempts were made to restore power and after two hours the procedural requirement to insert control rods was implemented. Thirty eight days later a corrective action document (CAR) identified the discrepancy.

The licensee recently has initiated CARs 200702601 and 200702606 which highlighted the need to re-review the 2003 event to ensure procedural content and operator training was adequate to respond to future events. These corrective action documents have been assigned significance level 3 and the actions prescribed have the potential to address the 2003 inadequacies.

The concerns described in Allegation RIV- 2007-A-0028, and confirmed by inspection, were contrary to the requirements of the licensee's Technical Specification bases and operating procedures and were an initiating events reactor restart concern. The NRC plans to document this violation in NRC Inspection Report 2007-003.

Concern 2
The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor.

Resolution 2:
As a result of the inspection, this aspect of Concern 2 was substantiated. The NRC reviewed computer point trend data, operator logs, Technical Specification requirements, corrective action documents and operator procedural guidance.

The reactor did become subcritical without immediate operator action and did transition through

Resolution of Concerns

five decades of power decrease due to the transient in a 20 minute period. No attempts were made to restore power and after two hours the procedural requirement to insert control rods was implemented. This time delay was not prudent and did suggest that the operators may not have exercised optimum reactivity management and may not have had adequate plant awareness. The inspector's review of operating procedures did not find any timeliness guidance on performing the steps to insert the control rods.

June 13, 2007

MEMORANDUM TO: Harry Freeman, Senior Allegations Coordinator

FROM : Vincent Gaddy, Chief, Projects Branch B, Division Reactor Projects, Region IV

SUBJECT: ALLEGATION RIV- 2007-A-0028 CLOSURE MEMO, CONCERN 3

This memorandum provides information to address the alleger's concerns regarding the subject allegation. The NRC has completed its follow-up and inspection of the Concern Number 3. The enclosed "Resolution of Concerns" documents the concern and summarizes the NRC resolution. The NRC performed an onsite inspection between the dates of April 5, 2007 to April 30, 2007. This concern was not substantiated.

Unless the NRC receives additional information that suggests that these conclusions should be altered, Branch B plans no further action and considers this concern closed.

RESOLUTION OF CONCERNS

Concern 3

The licensee does not have a healthy SCWE. The environment for raising concerns was poor for three events [October 2003 below RCS Minimum Temperature for Critical Operation, June 2005 slow to isolate SI accumulator during shutdown transient, August 2005 slow to isolate SI accumulator during shutdown for ESW pin hole leak down power]. As a result problems were not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs.

Resolution 3:

This concern was not substantiated. As followup to this concern, the inspectors interviewed several Operations first line supervisors, reviewed computer point trend data, operator logs, CARs 200505434 and 200501122, FSAR Section 5.2.2.10.4 and Technical Specification requirements, corrective action documents and operator procedure guidance.

To determine whether a healthy environment exists today the inspectors interviewed several Operations department first line supervisors. All responses indicated that the Operations shift manager, operations managers, ECP manager and other managers were not a factor in their likelihood to self identify and follow through actions to correct discovered problems. Each also stated that problem identification highlighting their own or crew errors would also not be a factor in their likelihood to participate in the corrective action program. Two individuals stated they had recently made personal errors yet were encouraged to develop the corrective actions. The individuals interviewed believed that the SCWE had improved since 2003 and 2005. The licensee had an independent contractor, Synergy, perform SCWE surveys in 2003, 2005, and 2007. The 2003 and 2005 survey results were completed prior to the respective events provided by the alleger. These did provide a focus on the Operations department but did not indicate an unhealthy environment for raising concerns. The surveys showed that overall plant SCWE had improved to be "very good to strong" in 2005 and 2007. Several departments were noted as needing improvement but Operations department was not one of them.

ATTACHMENT 5

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

August 2, 2007

Charles D. Naslund, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT - NRC INTEGRATED INSPECTION REPORT 05000483/2007003

Dear Mr. Naslund:

On June 23, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Callaway Plant. The enclosed report documents the inspection findings, which were discussed on June 22, 2007, with Mr. C. Naslund, Senior Vice President and Chief Nuclear Officer, and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

This report documents three findings that were evaluated under the risk Significance Determination Process as having very low safety significance (Green). The NRC has determined that violations are associated with these issues. Additionally, licensee identified violations which were determined to be of very low safety significance are listed in this report. These violations are being treated as noncited violations, consistent with Section VI.A of the Enforcement Policy. The noncited violations are described in the subject inspection report. If you contest these violations or the significance of these noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Callaway Plant facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Vincent G. Gaddy, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-483
License: NPF-30

Enclosure:
NRC Inspection Report 05000483/2007003
w/attachment: Supplemental Information

cc w/enclosure:
Professional Nuclear Consulting, Inc.
19041 Raines Drive
Derwood, MD 20855

John O'Neill, Esq.
Pillsbury Winthrop Shaw Pittman LLP
2300 N. Street, N.W.
Washington, DC 20037

Keith A. Mills, Supervising Engineer,
Regional Regulatory Affairs/
Safety Analysis
AmerenUE
P.O. Box 620
Fulton, MO 65251

Missouri Public Service Commission
Governor's Office Building
200 Madison Street
P.O. Box 360
Jefferson City, MO 65102

H. Floyd Gilzow
Deputy Director for Policy
Missouri Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102-0176

Rick A. Muench, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

Dan I. Bolef, President
Kay Drey, Representative
Board of Directors Coalition
for the Environment
6267 Delmar Boulevard
University City, MO 63130

Les H. Kanuckel, Manager
Quality Assurance
AmerenUE
P.O. Box 620
Fulton, MO 65251

Director, Missouri State Emergency
Management Agency
P.O. Box 116
Jefferson City, MO 65102-0116

Manager, Regulatory Affairs
AmerenUE
P.O. Box 620
Fulton, MO 65251

David E. Shafer
Superintendent, Licensing
Regulatory Affairs
AmerenUE
P.O. Box 66149, MC 470
St. Louis, MO 63166-6149

Certrec Corporation
4200 South Hulen, Suite 630
Fort Worth, TX 76109

Keith G. Henke, Planner
Division of Community and Public Health
Office of Emergency Coordination
930 Wildwood, P.O. Box 570
Jefferson City, MO 65102

Ronald L. McCabe, Chief
Technological Hazards Branch
National Preparedness Division
DHS/FEMA
9221 Ward Parkway
Suite 300
Kansas City, MO 64114-3372

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Regional Administrator **(BSM1)**
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DRS Deputy Director **(RJC1)**
DRS Deputy Director **(WBJ)**
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Branch Chief, DRP/B **(VGG)**
Team Leader, DRP/TSS **(CJP)**
RITS Coordinator **(MSH3)**
DRS STA **(DAP)**
M. Kunowski, OEDO RIV Coordinator **(MAK3)**
D. Pelton, OEDO RIV Coordinator **(DLP1)**
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-483
License:	NPF-30
Report Number:	05000483/2007003
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	March 25 through June 23, 2007
Inspectors:	M. S. Peck, Senior Resident Inspector D. E. Dumbacher, Resident Inspector G. L. Guerra, CHP, Health Physicist, Plant Support Branch D. P. Loveless, Senior Reactor Analyst S. T. Makor, Reactor Inspector, Engineering Branch 1 J. M. Mateychick, Senior Reactor Inspector, Engineering Branch 2 J. P. Reynoso, Reactor Inspector, Engineering Branch 1
Accompanying Personnel:	L. E. Ellershaw, PE, Consultant
Approved By:	V. G. Gaddy, Chief, Project Branch B

CONTENTS

SUMMARY OF FINDINGS 3

REPORT DETAILS 6

1. REACTOR SAFETY 6
   - 1R04 Equipment Alignment 6
   - 1R05 Fire Protection 8
   - 1R07 Heat Sink Performance 10
   - 1R08 Inservice Inspection Activities 10
   - 1R12 Maintenance Effectiveness 16
   - 1R13 Maintenance Risk Assessments and Emergent Work Control 16
   - 1R15 Operability Evaluations 17
   - 1R17 Permanent Plant Modification 18
   - 1R19 Postmaintenance Testing 18
   - 1R20 Refueling and Outage Activities 19
   - 1R22 Surveillance Testing 21

2. RADIATION SAFETY 22
   - 2OS1 Access Control to Radiologically Significant Areas 22
   - 2OS2 ALARA Planning and Controls 24
   - 4OA1 Performance Indicator Verification 25
   - 4OA2 Identification and Resolution of Problems 26
   - 4OA3 Event Followup 31
   - 4OA5 Other Activities 32
   - 4OA6 Management Meetings 34
   - 4OA7 Licensee-Identified Violations 34

SUPPLEMENTAL INFORMATION A-1

KEY POINTS OF CONTACT A-1

ITEMS OPENED, CLOSED, AND DISCUSSED A-1

DOCUMENTS REVIEWED A-2

SUMMARY OF FINDINGS

IR 05000483/2007003; 03/25/2007 - 06/23/2007; Callaway Plant: Equipment Alignment, Refueling and Outage Activities, and Identification and Resolution of Problems.

This report covered a 3-month inspection by resident inspectors. Three Green noncited violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the Significance Determination Process does not apply may be Green or assigned a severity level after NRC management review. The NRC's program of overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," after AmerenUE failed to implement effective corrective actions to correct discrepancies in the ultimate heat sink design basis. The system design basis required the ultimate heat sink automated temperature controller to align the cooling tower only when outside temperatures were above 80 degrees Fahrenheit. AmerenUE allowed manual operation of the system when temperatures were above 47 degrees Fahrenheit. The engineering staff and later the quality assurance staff independently identified that the design basis operating requirements had not been adequately evaluated. The inspectors identified that the corrective actions assigned had been closed out as complete without problem resolution and that the ultimate heat sink cooling towers were operated on April 3, 2007, when outside conditions were below 29 degrees Fahrenheit. The uncontrolled workaround resulted in AmerenUE subjecting the cooling tower fill material and fan to freezing conditions.

  This finding is greater than minor because it is associated with the mitigating systems cornerstone equipment performance attribute and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, which was both a performance and design deficiency that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1(c)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200703584 (Section 1R04).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," after AmerenUE's past corrective actions were inadequate to identify and correct essential service water piping degradation due to corrosion. AmerenUE identified that nondestructive examinations were required to determine the extent of condition of microbiological influenced corrosion on the 30-inch and 8-inch essential service water piping. On May 3, 2007, operability determinations used to support Refueling Outage 15 restart stated that 100 percent of the low flow area accessible piping would be tested using nondestructive examination. On May 26, 2007, microbiological influenced corrosion caused a new through-wall leak in the control building low flow, accessible piping. The licensee's extent of condition review was not adequate to identify the corroded pipe prior to the through-wall leak.

  This finding, associated with failure to implement corrective action, is greater than minor because, if left uncorrected, this finding would become a more significant safety concern. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, was both a performance and design deficiency that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1(c)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200705489 (Section 4OA2).

Cornerstone Barrier Integrity

- Green. The inspectors identified a noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," after refueling personnel did not maintain procedurally required foreign material exclusion barriers. AmerenUE's foreign material exclusion procedure specified attaching foreign material exclusion curtains to the plant north end of the reactor head missile shield to ensure no foreign material was introduced into the reactor vessel. On April 19, 2007, the inspectors observed the reactor refueling task and noted that there were no curtains acting as the north refueling cavity boundary.

  This finding is greater than minor because, if left uncorrected, introduction of foreign material into the reactor cavity would become a more significant safety concern. The barrier integrity cornerstone human performance attribute is used to ensure foreign material and loose parts do not challenge fuel cladding. The inspectors determined this finding to be of very low safety significance using the significance determination process for at-power reactor situations. The inspectors used the at-power significance determination process because of the concern with foreign material impact on an operating reactor core. This finding is of very low safety significance per Inspection Manual Chapter 0609 because the condition was a fuel barrier issue. This finding had a crosscutting aspect in the area of human performance associated with the resources component because plant operators failed to follow procedures established to prevent

the introduction of foreign material into the reactor vessel (H.4(b)). This issue was entered into the licensee's corrective action program as Callaway Action Request 200704169 (Section 1R20).

B. Licensee-Identified Violations

Three violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and their corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

AmerenUE operated the Callaway Plant at full power at the beginning of the inspection period. On April 2, 2007, AmerenUE shut down the plant and began Refueling Outage 15. During the outage, the licensee modified the containment recirculation sumps, replaced the main steam isolation valves, and completed significant repairs to essential service water system piping. AmerenUE restarted the plant on May 10, 2007 and returned the unit to full power on May 14, 2007. AmerenUE operated the plant at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdowns

a. Inspection Scope

The inspectors: (1) walked down portions of risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walkdown to AmerenUE's Final Safety Analysis Report (FSAR) and corrective action program to ensure problems were being identified and corrected.

- April 27, 2007, Train B Essential Service Water System
- June 18, 2007, Train B Control Room Ventilation System

Documents reviewed by the inspectors included:

- Piping and Instrument Drawing M-U2EF01, Essential Service Water System, Revision 55
- Piping and Instrument Drawing M-22-GK01, Control Building HVAC, Revision 15
- Piping and Instrument Drawing M-22-GK02, Control Building HVAC, Revision 17
- Piping and Instrument Drawing M-22-GK03, Control Building HVAC, Revision 19
- Piping and Instrument Drawing M-22-GK04, Control Building HVAC, Revision 17
- Callaway Action Request (CAR) 200704465, Essential Service Water System Material Condition for Restart from Refueling Outage 15

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown (71111.04S)

a. Inspection Scope

The inspectors: (1) reviewed plant procedures, drawings, the FSAR, Technical Specifications, and vendor manuals to determine the correct alignment of the ultimate heat sink system; (2) reviewed outstanding design issues, piping repair and replacement activities, operator workarounds, and FSAR documents to determine if open issues affected the functionality of the system; and (3) verified that the licensee was identifying and resolving equipment alignment problems.

Documents reviewed by the inspectors included:

- CAR 200703556, Allow Ultimate Heat Sink Cooling Tower Operations at Wet-bulb Temperature less than 47 degrees Fahrenheit
- CAR 200703279, Inspect Ultimate Heat Sink Cooling Tower Fill Material to Ensure No Damage
- Piping and Instrument Drawing M-U2EF01, Essential Service Water System, Revision 55

The inspectors completed one sample.

b. Findings

Ineffective Corrective Actions to Evaluate the Design Basis for an Ultimate Heat Sink Workaround.

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," after AmerenUE failed to implement effective corrective actions to correct discrepancies in the ultimate heat sink design basis. As a result, the licensee operated the ultimate heat sink cooling towers when outside conditions were below the minimum required temperatures to prevent freezing of system components.

Description. The inspectors identified that the licensee had not corrected discrepancies in the ultimate heat sink design basis. In 2003 and 2005 engineering personnel initiated corrective action documents CAR 200306252, "Manual Override of Ultimate Heat Sink Cooling Tower Inlet Bypass Valves," and CAR 200505716, "Override of Ultimate Heat Sink Cooling Tower Safety Limit Setpoints," to establish the cooling tower system design bases allowing manual operation. In 2006, the licensee's independent assessment organization recognized that the corrective actions were less than adequate and initiated CAR 200604872, "Configuration Control Issue - UHS Cooling Water Bypass Valves," to validate the design change. In 2007, the inspectors identified that the licensee had

closed out CAR 200604872 without completing assigned corrective actions.

On April 3, 2007, the inspectors identified that plant operators were operating the ultimate heat sink in manual mode outside the established design basis. The cooling tower vendor limited operation to temperatures above 80 degrees Fahrenheit to ensure freeze protection of the system components. Outside air temperature decreased significantly overnight to a wet-bulb temperature of less than 29 degrees Fahrenheit. The inspectors identified that the operators were unaware that a configuration contrary to the operating procedure existed. This was a violation of the licensee's procedure and an uncontrolled workaround that resulted in subjecting the ultimate heat sink cooling tower fill material and fan to freezing conditions. On April 9, 2007, after temperatures had increased above freezing, the licensee performed an inspection and found no apparent damage to the cooling tower components.

Analysis. Failure of the licensee to implement adequate corrective actions to translate the ultimate heat sink design bases into operating specifications was a performance deficiency. This finding is greater than minor because, if left uncorrected, this finding would become a more significant safety concern. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, involved performance and design deficiencies that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1(c)).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be taken to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, the licensee failed to take action to promptly identify and correct a condition adverse to quality. Specifically, in 2003, 2005, and 2006, several examples existed that demonstrated that AmerenUE did not take measures to evaluate and correct adverse operating design changes made to the ultimate heat sink system components. Because this finding is of very low safety significance and was entered into the corrective action program (CAR 200703584), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy:
NCV 05000483/2007003-01, Ineffective Corrective Actions to Evaluate the Design Basis for an Ultimate Heat Sink Workaround.

1R05 Fire Protection (71111.05)

Quarterly Inspection (71111.05Q)

a. Inspection Scope

The inspectors walked down the eight listed plant areas to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were

controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the FSAR to determine if AmerenUE identified and corrected fire protection problems.

- April 9, 2007, Fire Area RB, Reactor Building
- May 17, 2007, Fire Areas U104 and U105, Essential Service Water Pump Rooms
- May 17, 2007, Refueling Water, Condensate, and Diesel Fuel Oil Storage Tanks
- May 29, 2007, Fire Area A-5, Auxiliary Building South Stairwell and Elevator
- May 29, 2007, Fire Area A-6, Auxiliary Building North Stairwell and Elevator
- May 30, 2007, Fire Area C-9, Engineered Safety Features Switchgear Room, North 3301
- May 30, 2007, Fire Area C-10, Engineered Safety Features Switchgear Room, South 3302
- June 18, 2007, Fire Area A-18, North Electrical Penetration Room

Documents reviewed by the inspectors included:

- Procedure APA-ZZ-0741, Control of Combustible Materials, Revision 18
- Fire Protection Impairment Permit 13236, Activated May 30, 2007
- Modification MP 07-0050, Revision 0, Modification to Fire Door DSK 15031

The inspectors completed eight samples.

Annual Inspection

On April 5, 2007, the inspectors observed the plant fire brigade's response to a fire in the control building south battery and switchboard rooms. The inspectors evaluated the readiness of licensee personnel to prevent and fight fires, including the following aspects: (1) the number of personnel assigned to the fire brigade, (2) use of protective clothing, (3) use of breathing apparatuses, (4) use of fire procedures and declarations of emergency action levels, (5) command of the fire brigade, (6) implementation of pre-fire strategies and briefs, (7) access routes to the fire and the timeliness of the fire brigade response, (8) establishment of communications, (9) effectiveness of radio

communications, (10) placement and use of fire hoses, (11) entry into the fire area, (12) use of fire fighting equipment, (13) searches for fire victims and fire propagation, (14) smoke removal, and (15) use of pre-fire plans, and (16) restoration from the fire.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed AmerenUE programs, verified performance tests against industry standards, and reviewed critical operating parameters and maintenance records for the Train B component cooling water heat exchanger. The inspectors verified that: (1) performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; (2) AmerenUE utilized the periodic maintenance method outlined in Electric Power Research Institute NP-7552, "Heat Exchanger Performance Monitoring Guidelines"; (3) AmerenUE properly utilized biofouling controls; (4) AmerenUE's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and (5) the heat exchanger system was correctly categorized under the maintenance rule.

- April 2, 2007, Train B Component Cooling Water Heat Exchanger Performance Test

Documents reviewed by the inspectors included:

- Calculation Report for Train B Component Cooling Water Heat Exchanger Proto-Hx 4.10 EEG01B Provided by Proto Power Corporation (SN#PHX-0000) on April 2, 2007

- Surveillance 04503553, Procedure ETP-EG-00002, Component Cooling Water Heat Exchanger Performance Test, Revision 6

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

Inspection Procedure 71111.08 requires a minimum sample size of four (as identified in Sections 02.01, 02.02, 02.03, and 02.04).

.1 Performance of Nondestructive Examination Activities Other Than Steam Generator Tube Inspections, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, Boric Acid Corrosion Control

a. Inspection Scope

The inspection procedure required the review of nondestructive examination activities consisting of two or three different types (i.e., volumetric, surface, or visual). The inspectors witnessed the performance of: 2 ultrasonic examinations (volumetric) on main steam system welds; 11 ultrasonic examinations (volumetric) on reactor vessel head control rod drive mechanism (CRDM) nozzles; 1 liquid penetrant examination (surface) on a residual heat removal system weld, and 2 visual examinations (visual) on component cooling water system component supports. The licensee is currently in their third 10-year inservice inspection interval, which began on December 19, 2004, and will routinely end on December 18, 2014.

The table below identifies the above examinations, which were conducted using three methods and three different examination types.

Component	Identity	Examination Type	Examination Method
Main Steam System pipe-to-pipe weld	2-AB-01-F074	Volumetric	Ultrasonic (Report UT-07-018)
Main Steam System pipe-to-pipe weld	2-AB-01-F007	Volumetric	Ultrasonic (Report UT-07-019)
Reactor Vessel Head Penetration Nozzles	CRDM Nozzle numbers 8, 17, 21, 31, 36, 47, 54, 64, 71, 75, and 77	Volumetric	Ultrasonic (Reports identified by CRDM Nozzle numbers)
Residual Heat Removal System integral attachment (to pipe) weld	2-EJ-03-A003	Surface	Liquid Penetrant (Report PT-07-003)
Component Cooling Water System Component Support	EG-09-C001-231	Visual	VT-3 (Report 05042-07-020)
Component Cooling Water System Component Support	EG-06-R008-123	Visual	VT-3 (Report 05042-07-021)

Additionally, the inspectors reviewed the nondestructive examination reports for the following six surface examinations:

- One magnetic particle examination report (MT-07-001) performed on main steam line valve bonnet bolting identified as Component 2-AB-01-HV-14-6-R

- Five liquid penetrant examination reports (900708-07, -19, -20, -21, and -23) performed on the sacrificial stainless steel and Alloy 52 structural weld overlays on Pressurizer Nozzle TBB003

For each of the nondestructive examination activities observed, the inspectors verified that the examinations were performed in accordance with the specific site procedures and the applicable American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requirements. The inspectors also verified that the ultrasonic examination procedure (AUE-UT-98-1) used for the two main steam line system pipe welds had been appropriately qualified in accordance with Appendix VIII to Section XI of the ASME Code (Performance Demonstration Initiative), and had been demonstrated to the satisfaction of the Authorized Nuclear Inservice Inspector.

During review of each examination, the inspectors verified that appropriate nondestructive examination procedures were used, that examinations and conditions were as specified in the procedure, and that test instrumentation or equipment was properly calibrated and within the allowable calibration period. The inspectors also verified that the personnel who performed the above ultrasonic, magnetic particle, visual, and liquid penetrant examinations were properly certified.

The inspection procedure required review of one or two examinations with recordable indications that were accepted for continued service to ensure that the disposition was made in accordance with the ASME Code. The inspectors reviewed CAR 200403580, which documented the identification of flaws in cold leg inlet nozzle safe end-to-elbow Weld 2-BB-01-F302. The flaws were identified, evaluated, and documented on April 30, 2004, during the volumetric (ultrasonic and eddy current) examinations conducted during Refueling Outage 13. The inspectors reviewed the results of this examination. The licensee contracted to have an analytical evaluation performed by both Westinghouse and Structural Integrity Associates in accordance with ASME Code Section XI, IWB-3640, which provides the specific rules for the performance of such evaluations. The results of the evaluations (performed in 2004) supported continued unit operation for three years leaving the flaws as-is (i.e., no repairs required at that time).

The inspectors also reviewed the original (construction) radiographic film. The film was of such poor quality that it was not possible to determine the existence of an indication. The licensee, in a further attempt to determine if the indications had existed since construction, produced a digitized film from the original construction film. While inconclusive, the digitized film appeared to exhibit a very faint linear-type indication.

Subsequent to the exit meeting conducted on April 12, 2007, the licensee performed a volumetric (ultrasonic) examination of the area of the cold leg containing the indication. The examination results were documented in the licensee's report, "Refueling

Outage 15 Reactor Vessel Examination Summary," dated April 15, 2007, which was provided to the inspectors for review. A review of the report, the ultrasonic examination scan sheets (detection, B, and C) and Indication Assessment Sheet W247-IND-1, provided the data which showed that Indication 1 was still acceptable in accordance with Subarticle IWB 3514-2 in Section XI of the ASME Code. Indication 2, which was previously and currently unacceptable in accordance with IWB-3514-2, had not changed appreciably from the previous examination performed during April 2004. Therefore, the results of the evaluations performed previously in 2004 under the rules of Subarticle IWB-3640 of Section XI of the ASME Code are still valid. Those results supported continued unit operation for three years leaving the flaws as-is (i.e., no repairs required at this time).

The inspection procedure further required verification of one to three welds on Class 1 or 2 pressure boundary piping to ensure that the welding process and welding examinations were performed in accordance with the ASME Code. The inspectors observed portions of the preemptive weld overlay on the ASME Code Class 1 pressurizer surge line nozzle dissimilar weld identified as follows:

Component	Weld Identity	Welding Process
Pressurizer Elbow to Nozzle	Nozzle TBB03 dissimilar weld	Gas Tungsten Arc Welding (Machine)

Additionally, the inspectors observed manual gas tungsten arc welding performed on ASME Code Class 3 small bore essential service water piping. This welding was a stainless steel weld joining carbon steel to stainless steel using ER 309L welding filler material. The applicable weld was FW-10 identified in Work Request 06114493-500.

The inspectors verified, by review, that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX requirements. The inspectors also verified, through observation and record review, that essential variables for the gas tungsten arc welding process had been identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specification.

The inspectors also verified by observation that weld filler materials were properly stored and controlled and that proper administrative controls were being implemented with respect to issuance and return of weld filler materials.

The inspectors completed one sample under this section.

b. Findings

No findings of significance were identified.

.2 Reactor Vessel Upper Head Penetration Inspection Activities

The inspection procedure requires this section to be performed after completion of Temporary Instruction TI 2515/150, "Reactor Pressure Vessel and Vessel Head Penetration Nozzles." The TI had not been completed for the Callaway Plant at the time of this inspection, thus this section was not performed. Applicable sections of the TI, however, were performed with the inspection results reported in Section 4OA5, "Other Activities."

.3 Boric Acid Corrosion Control Inspection Activities (Pressurized Water Reactors)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be deleteriously affected by boric acid corrosion.

The inspection procedure required review of a sample of boric acid corrosion control walkdown visual examination activities through either direct observation or record review. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walkdown as specified in Procedure EDP-ZZ-01004, "Boric Acid Corrosion Control Program," Revision 4. Visual records of the components and equipment were also reviewed by the inspectors.

Additionally, the inspectors independently performed examinations of piping containing boric acid during a walkdown of the containment building and the auxiliary building.

The inspection procedure required verification that visual inspections emphasize locations where boric acid leaks can cause degradation of safety significant components. The inspectors verified through direct observations, including touring the reactor building with the resident inspector and by program/record review that the licensee's boric acid corrosion control inspection efforts are directed towards locations where boric acid leaks can cause degradation of safety-related components. On those components where boric acid was identified, the engineering evaluations gave assurance that the ASME Code wall thickness limits were properly maintained. The evaluations also confirmed that the corrective actions performed for evidence of boric acid leaks were consistent with requirements of the ASME Code.

The inspection procedure required both a review of one to three engineering evaluations performed for boric acid leaks found on reactor coolant system piping and components, and one to three corrective actions performed for identified boric acid leaks. The inspectors reviewed engineering evaluations associated with CARs 200510316, 200600295, 200601263, 200602580, 200603745, 200606821, and 200610436, which addressed boric acid leaks identified on reactor coolant system, containment spray, residual heat removal, safety injection accumulator man-way and chemical volume and control system pumps and valves. The evaluations appropriately addressed the causes and corrective actions, and were generally consistent with industry standards.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube Inspection Activities

a. Inspection Scope

The inspectors verified that the steam generator tube eddy current examination scope met Technical Specification 5.5.9 "Steam Generator (SG) Program," requirements, industry guidelines, and commitments made to the NRC. Since this was the first post replacement in-service examination of the steam generators a confirmatory review of licensee operational assessment was not possible. The inspectors reviewed the licensee End-of-Cycle 15 Steam Generator Degradation Assessment, dated April 9, 2007, to confirm that known areas of potential degradation based on site-specific and industry experience were included in the scope of the inspection and steam generator program.

The licensee had scheduled a 100 percent tube inspection of all four replacement steam generators and planned for a foreign object search and retrieval into all steam generators to determine the cleanliness and general condition of the steam generators' internals. The inspectors selected and reviewed the acquisition technique sheets and their qualifying EPRI examination technique specification sheets to verify that the essential variables regarding flaw sizing accuracy had been identified and qualified through demonstration. The inspectors observed the collection and analysis of eddy current data by contractor personnel and verified that: (1) the eddy current probes being utilized were appropriate for identifying the expected types of indications, (2) probe position location verification was being performed, (3) calibration requirements were being adhered to, and (4) probe travel speed was in accordance with procedural requirements.

The inspectors completed one sample under this section.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection scope.

The inspection procedure required review of a sample of problems associated with inservice inspections documented by the licensee in the corrective action program for appropriateness of the corrective actions.

The inspectors reviewed nine CARs, which dealt with inservice inspection activities, and found that the corrective actions were appropriate. From this review the inspectors concluded that the licensee had an appropriate threshold for entering issues into the

corrective action program and had procedures that direct a root cause evaluation when necessary. The licensee also had an effective program for applying industry operating experience.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors reviewed the two listed maintenance conditions to: (1) verify the appropriate handling of structures, systems, and component performance or condition problems; (2) verify the appropriate handling of degraded structures, systems, or component functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of structures, systems, or component issues reviewed under the requirements of the maintenance rule, 10 CFR Part 50, Appendix B, and the Technical Specifications.

- June 15, 2007, Failures Associated with the Atmospheric Steam Dump System
- June 18, 2007, Failures Associated with the Digital Control Rod Position Indication System

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the six below listed assessment activities to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- April 4, 2007, Planned Reduced Reactor Vessel Inventory
- April 9, 2007, Planned Maintenance of Safeguards Transformer XNB02

- April 10, 2007, High Spent Fuel Pool Temperature Contingency Plan
- April 15, 2007, Planned Maintenance of Safeguards Transformer XNB01
- April 15, 2007, Planned Maintenance on Train A Essential Service Water Support
- April 26, 2007, Mid-loop Operations

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability determination was warranted for degraded components; (2) referred to the FSAR and design basis documents to review the technical adequacy of licensee operability determinations; (3) evaluated compensatory measures associated with operability determinations; (4) determined degraded component impact on any Technical Specifications; (5) used the Significance Determination Process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that AmerenUE has identified and implemented appropriate corrective actions associated with degraded components.

- April 4, 2007, Callaway Action Request 200703257, Through-wall Leak in the Train A Residual Heat Removal Room Cooler
- April 14, 2007, Callaway Action Request 200703899, Through-wall Leak in Train A Underground Essential Service Water Piping
- May 4, 2007, Callaway Action Request 200704465 and Cycle 16 Operation Document NE-02, Callaway Acceptability of Essential Service Water System for Cycle 16 Operation
- May 21, 2007, Callaway Action Request 200705410, Train A Emergency Diesel Generator Annunciator Failures due to Local Panel KJ121 Blown Fuse
- May 26, 2007, Callaway Action Request 200705489, Through-wall Leak in Large Bore Essential Service Water Piping

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification (71111.17)

Annual Review

a. Inspection Scope

The inspectors reviewed Modification MP-00-1009B which replaced the actuators and modified the seating surface of the four main steam isolation valves. The inspectors verified that necessary Technical Specification changes have been identified and NRC approvals, if required, were obtained prior to modification implementation. The inspectors verified acceptability of licensee's conclusions for the modification when evaluated in accordance with 10 CFR 50.59.

Documents reviewed by the inspectors included:

- NRC NUREG 800, Standard Review Plan, Revision 2
- Surveillance 06523157, Main Steam Isolation Valve Inservice/Modification Test in Mode 4, May 5, 2007

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the four listed postmaintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing-basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also reviewed the FSAR to determine if AmerenUE identified and corrected problems related to postmaintenance testing.

- April 18, 2007, PMT 05111232.920, Train A Containment Recirculation Sump Motor-operated Valve EMV8811A Following Rebuilding of the Motor

- April 20, 2007, PMT 05108708.900, Train A Load Shedding Emergency Load Sequencing Power Supply Replacement

- May 5, 2007, PMT 711061.914, Train B Motor-driven Auxiliary Feedwater Pump Following Preventive Maintenance

- June 4, 2007, PMT 709123.910, Train A Class 1E Electrical Equipment Air Conditioning Unit Following Preventative Maintenance

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the following risk significant refueling items or outage activities to verify defense-in-depth commensurate with the outage risk control plan, compliance with the Technical Specifications, and adherence to commitments in response to Generic Letter 88-17, "Loss of Decay Heat Removal": (1) the risk control plan; (2) tagging/clearance activities; (3) reactor coolant system instrumentation; (4) electrical power; (5) decay heat removal; (6) spent fuel pool cooling; (7) inventory control; (8) reactivity control; (9) containment closure; (10) reduced inventory or midloop conditions; (11) refueling activities; (12) heatup and cooldown activities; (13) restart activities; and (14) licensee identification and implementation of appropriate corrective actions associated with refueling and outage activities. The inspectors' containment inspections included observations of the containment sump for damage and debris, and supports, braces, and snubbers for evidence of excessive stress, water hammer, or aging.

- April 5, 2007, Mid-loop Operations from the Control Room

- April 6, 2007, Spent Fuel Pool Time-to-Boil Method, In-office Review

- April 9, 2007, CAR 200703537, High Spent Fuel Pool Temperature Following Core Off-load

- April 19, 2007, Reactor Vessel Fuel Reload Activities, from the Reactor Building and Control Room

- May 4, 2007, Containment Closure Walkdown

- May 8, 2007, Reactor Startup, from the Control Room and the Outage Control Center

- May 8, 2007, Core Reactivity Balance Comparison by Boron Endpoint Measurement, Procedure ESP-ZZ-00030, Revision 1 (Surveillance 05517777)

- May 8, 2007, Moderator Temperature Coefficient Measurement at Zero Power, (Surveillance 05515418), Procedure ESP-ZZ-00009, Revision 21

- May 8, 2007, Rod Drop Testing Using the Plant Computer, (Surveillance 05514253), Procedure ESP-ZZ-00001, Revision 14

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

Failure to Implement Foreign Material Controls for the Refueling Cavity with Reactor Head Removed.

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when refueling operations were in progress without required foreign material exclusion barriers.

Description. Procedure APA-ZZ-00801, "Foreign Material Exclusion," Revision 24, designated the containment refueling pool as a foreign material exclusion area, FME-1. Procedure APA-ZZ-00801's FME-1 controls checklist (CA2426) specified attaching foreign material exclusion curtains to the plant north end of the reactor refueling cavity and posting the entrance to the area with a "Notice" sign. On April 19, 2007, the inspectors identified that there were no curtains acting as the north refueling cavity boundary. In addition, work on the control rod drive fan near the north end of the FME-1 area had inadequate foreign material exclusion controls. Checklist CA2426 required work group supervisors to verify that applicable foreign material exclusion measures had been established. Failure to follow the foreign material exclusion requirements could lead to the introduction of foreign material into the reactor vessel. This foreign material could create unanalyzed flow disturbances and flow blockage in the reactor core with resultant fuel cladding integrity issues.

Analysis. The performance deficiency associated with this finding was a failure of refueling personnel to follow plant procedures that establish an adequate foreign material barrier during reactor refueling operations. This finding affected the barrier integrity cornerstone objective to provide assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. This finding is greater than minor because, if left uncorrected, introduction of foreign material into the reactor cavity would become a more significant safety concern. The inspectors determined this finding to be of very low safety significance using the significance determination process for at-power reactor situations. The inspectors used the at-power significance determination process because of the concern with potential foreign material impact on an operating reactor core. This finding is of very low safety significance per Inspection Manual Chapter 0609 because the condition was a fuel barrier issue. This finding had a crosscutting aspect in the area of human performance

associated with the resources component because plant operators failed to follow procedures established to prevent the introduction of foreign material into the reactor vessel (H.4(b)).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," required that activities affecting quality be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings. Administrative Procedure APA-ZZ-00801, "Foreign Material Exclusion," Revision 24, required implementation of foreign material exclusion controls for the refueling cavity when the reactor vessel head was removed. Contrary to the above, on April 19, 2007, the written procedures established by the licensee were not implemented. Specifically, the licensee failed, during performance of the reactor fuel offload and reload, to implement foreign material exclusion control procedures. Because this issue is of very low safety significance and has been entered into the licensee's corrective action program as CAR 200704169, this violation is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000483/2007003-02, Failure to Implement Foreign Material Controls for the Refueling Cavity with Reactor Head Removed.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the FSAR, procedure requirements, and Technical Specifications to ensure that the thirteen listed surveillance activities demonstrated that the structures, systems, or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated Technical Specifications operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of American Society of Mechanical Engineers code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested structures, systems, or components not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that AmerenUE identified and implemented any needed corrective actions associated with the surveillance testing.

- March 23, 2007, Surveillance 06532546, Steam Generator Blowdown Valve Inservice Test

- April 2, 2007, Routine Surveillance 07502824, Procedure OSP-BG-00002, Verify Component Cooling Pump A Inoperable for Cold Overpressure Mitigation System

- April 2, 2007, Routine Surveillance 05515422, Procedure OSP-SA-0018A, Train A Slave Relay K602

- April 12, 2007, Surveillances 06523017.500 and 0703806.500, Residual Heat Removal Check Valve Inservice Test

- April 17, 2007, Routine Surveillance 05517224, Procedure OTS-AL-00001, Revision 13, Train B Essential Service Water to Turbine-driven Auxiliary Feedwater Pump Flush

- April 18, 2007, Surveillance 04502339, Encapsulated Valve EJ8811A Inservice Test, Procedure OSP-EJ-V002A

- April 18, 2007, Routine Surveillance 05108705/200/500, Simulated Loss of Off-site Power and Loss of Coolant Accident

- April 19, 2007, Routine Surveillance 07504177, Pre-core Alteration Verifications

- April 19, 2007, Routine Surveillance 05516633, Fuel Reload, Procedure ETP-ZZ-0035, Revision 27

- May 1, 2007, Surveillance 07003586/900, Replacement Check Valve EMV0006 Local Leak Rate Test

- May 1, 2007, Surveillance 07003730/904, Outer Containment Butterfly Valve EFHV0031 Local Leak Rate Test, CAR 200704266

- May 8, 2007, Surveillance P701140/910 and 06523136, Inservice Test of the Turbine-driven Auxiliary Feedwater Pump and Discharge Check Valve, Procedure OSP-AL-PV005, Revision 1

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six routine, four inservice test, and two containment isolation valve samples.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspectors used the requirements in 10 CFR Part 20, the Technical Specifications, and the licensee's procedures required by Technical Specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager,

radiation protection supervisors, and radiation workers. The inspectors performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the occupational radiation safety cornerstone
- Controls (surveys, posting, and barricades) of radiation, high radiation, or airborne radioactivity areas
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Conformity of electronic personal dosimeter alarm set points with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms
- Barrier integrity and performance of engineering controls in airborne radioactivity areas
- Physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- Radiation work permit briefings and worker instructions
- Adequacy of radiological controls such as, required surveys, radiation protection job coverage, and contamination controls during job performance
- Dosimetry placement in high radiation work areas with significant dose rate gradients
- Changes in licensee procedural controls of high dose rate - high radiation areas and very high radiation areas
- Controls for special areas that have the potential to become very high radiation areas during certain plant operations
- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed 20 samples.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed:

- Outage or on-line maintenance work activities scheduled during the inspection period and associated work activity exposure estimates, which were likely to result in the highest personnel collective exposures
- Site specific ALARA procedures
- Integration of ALARA requirements into work procedure and radiation work permit documents
- Dose rate reduction activities in work planning
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Workers use of the low dose waiting areas
- First-line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five of the required 15 samples and four of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Reactor Safety Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators listed below for the period from March 2006 through March 2007. The inspectors used the definitions and guidance contained in Nuclear Energy Institute 99-02, Regulatory Assessment Indicator Guideline, Revision 2, to verify the accuracy of the performance indicator data reported by AmerenUE:

- Mitigating Systems Performance Index, High Pressure Injection System
- Safety System Functional Failures

The inspectors reviewed a selection of Licensee Event Reports (LERs), portions of operator log entries, daily morning reports, the monthly operating reports, and performance indicator data sheets to determine whether AmerenUE adequately identified the number of unavailable hours for the selected systems. This number was compared to the number reported for the performance indicator during the current quarter. In addition, the inspectors also interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Occupational Radiation Safety Cornerstone

a. Inspection Scope

The inspectors reviewed licensee documents from October 1, 2006, through March 31, 2007. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's Technical Specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in Nuclear Energy Institute 99-02). Additional records reviewed included as low as reasonably achievable records and whole body counts of selected individual exposures. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspectors toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled.

Performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

- Occupational Exposure Control Effectiveness

The inspectors completed the one required sample in this cornerstone.

b. Findings

No findings of significance were identified.

.3 Public Radiation Safety Cornerstone

a. Inspection Scope

The inspectors reviewed licensee documents from October 1, 2006, through March 31, 2007. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element.

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

The inspectors completed the one required sample in this cornerstone.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a daily screening of items entered into the licensee's corrective action program. This assessment was accomplished by reviewing the daily CAR screening report and control room logs and attending selected CAR board and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the corrective action program; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow-up through other baseline inspection procedures.

b. Findings

No findings of significance were identified.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

In addition to the routine review, the inspectors selected the below listed issues for a more in-depth review. The inspectors considered the following during the review of AmerenUE's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- CAR 200702394, Essential Service Water System Inoperability Following Unauthorized Work, March 15, 2007
- CAR 200702652, Essential Service Water System Inoperability Following Unauthorized Removal of a Pipe Support, March 28, 2007
- CAR 2007005489, Essential Service Water Piping Through-wall Leak, May 26, 2007, Specifically Extent of Condition Missed During Refueling Outage 15
- CARs 200609805 and 200607188, Deferral of the Residual Heat Removal Suction Relief Valves Discharge Piping Modification as Corrective Action, April 19 and April 25, 2007

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

Failure to Identify and Correct Essential Service Water Pipe Wall Thinning.

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," after AmerenUE's extent of condition reviews to address essential service water microbiological influenced corrosion piping degradation were ineffective.

Description. AmerenUE failed to perform an adequate extent of condition review to identify and correct degraded essential service water piping. Poor material condition of the essential service water system has been a longstanding problem at the Callaway Plant, as described in NRC Integrated Inspection Report 05000483/2007002

(NCV 05000483/2007002-03). In March 2007, prior to the refueling outage, two through-wall pipe leaks occurred due to microbiological influenced corrosion. AmerenUE assessed the extent of the corrosion by performing nondestructive examination of the low flow accessible piping. The licensee identified greater than 100 locations of less than minimum wall thickness requiring either code repairs or pipe replacement. AmerenUE's plant restart evaluation, described in Operability Determination 200704465, was based on a 100 percent inspection of accessible low flow essential service water piping. AmerenUE completed the corrective actions and returned the unit to power operations on May 10, 2007. On May 26, 2007, a new through-wall leak in a low flow section of accessible piping occurred. The new through-wall leak occurred under a removable code identification band on a 30-inch pipe section. The licensee had not performed nondestructive examination under the code band during the extent of condition review because they incorrectly assumed that the code band could not be removed.

Analysis. Failure to perform an effective extent of condition review of the corroded essential service water piping was a performance deficiency. This finding is greater than minor because, if left uncorrected, this finding would become a more significant safety concern. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance because it affected the mitigating systems cornerstone, was both a performance and design deficiency that did not represent a loss of a safety function, and did not affect seismic, flooding or severe weather initiating events. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate problems such that the resolution would address causes and extent of conditions, as necessary (P.1.(c)).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be taken to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, the licensee failed to take action to promptly identify and correct a condition adverse to quality. Specifically, AmerenUE's extent of condition reviews during Refueling Outage 15 did not identify and correct essential service water pipe corrosion which resulted in wall thicknesses less than the minimum allowed by code requirements. Because this finding is of very low safety significance and was entered into the corrective action program (CAR 200705489), this violation is being treated as a noncited violation in accordance with Section VI.A.1 of the Enforcement Policy:
NCV 05000483/2007003-03, Failure to Identify and Correct Essential Service Water Pipe Wall Thinning.

.3 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semiannual trend review of repetitive or closely related issues that were documented in plant trend reports, problem lists, performance indicators, system health reports, quality assurance audit reports, corrective documents, and corrective maintenance documents to identify trends that might indicate the

existence of more safety significant issues. The inspectors' review consisted of the 6-month period of January through June 2007. When warranted, some of the samples extended beyond those dates to fully assess the issue. The inspectors compared and contrasted their results with the Callaway Plant Fourth Quarter Quarterly Performance Analysis Report (OQC-06-04).

1. Continued Adverse Trend in Evaluating Identified Adverse Conditions

The NRC identified an adverse trend in problem identification and another in problem evaluation in December 2006 (Inspection Report 05000483/2006005). The NRC subsequently identified a substantive crosscutting issue in the area of problem identification and resolution during the 2007 End-of-Cycle Assessment. The substantive crosscutting issue was based on eleven NRC findings specifically related to not thoroughly evaluating problems during 2006. This adverse trend continued through the second quarter of 2007.

- Ineffective Corrective Actions to Evaluate the Design Basis for an Ultimate Heat Sink Workaround (Section 1R04, NCV 05000483/2007003-01)

- Failure to Identify Extent of Condition and Correct Essential Service Water Pipe Wall Thinning (Section 4OA2, NCV 05000483/2007003-04)

2. Licensee Identified Continued Adverse Trend in Foreign Material Exclusion Controls

The licensee identified an adverse trend associated with the foreign material exclusion program implementation. Examples included:

- CAR 200508796, 18 Examples of Foreign Material Exclusion Program Inadequacies During Refueling Outage 14

- CAR 200700319, Adverse Trend of Foreign Materials in Containment

- CAR 200703858, Foreign Material Found Under the Insulation During the Bare Metal Visual Examination of the Reactor Vessel Head

- CAR 200703984, Foreign Material in High Pressure Feedwater Heater Inlet Piping

- CAR 200704185, Foreign Material Found During Train A Essential Service Water Supply and Discharge Piping Inspections

- CAR 200704169, Job Stopped due to Unsatisfactory Foreign Material Exclusion Control Near Refueling Pool

- CAR 200704369, Foreign Material Found in the Upper Reactor Cavity During Cavity Decon

- CAR 200704690, Adverse Trend in use of Foreign Material Exclusion Checklists During Pre-job Briefs

- CAR 200704692, APA-ZZ-00801 Procedural Guidance Unclear for Pre-Job Briefings

- CAR 200704693, Lack of Foreign Material Exclusion Observations for Supplemental Personnel During Refueling Outage 15

- CAR 200704694, Quality Assurance Self-assessment SA07-MM-F01, Identified Training Needed for Foreign Material Exclusion Pre-job Briefs

- CAR 200704846, Items Discovered on the May 4, 2007, NRC Containment Closeout Inspection

3. Licensee Identified Continued Adverse Trend in Calculation Errors

AmerenUE identified an adverse trend in calculation deficiencies. The annual number of deficient calculations increased 67 percent from June 2006 to June 2007. The licensee determined the increase was due to the newly established Calculation Review Project. During the last year, 306 calculations were reviewed and only 52 (17 percent) were found acceptable. Minor issues described as missing references, out-of-date references, and references superceded accounted for 199 of the deficient calculations.

The inspectors completed three semiannual trend samples.

b. Findings

No findings of significance were identified.

.4 Operator Workaround Review

a. The inspectors conducted one operator workaround review to verify that the licensee is identifying operator workaround problems at an appropriate threshold and entering them into the corrective action program and that the licensee has proposed or implemented appropriate corrective actions.

- April 3, 2007, Uncontrolled Workaround Resulted in Subjecting the Ultimate Heat Sink Cooling Tower to Freezing Conditions

The inspectors completed one workaround sample.

b. Findings

One finding of significance was identified and is described in Section 1R04 of this report.

.5 Radiation Safety

The inspectors evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

Documents reviewed by the inspectors included:

- Quality Assurance Surveillance Report SP07-015, Assessment of Corrective Actions for Essential Service Water Pipe Support Removal

The inspectors completed two samples.

4OA3 Event Followup (71153)

.1 (Closed) LER 05000483/2007-001-00, Single Train Inoperability in the Essential Service Water System due to Inadequate Valve Closure Settings

On February 7, 2007, the licensee identified that one essential service water train had been inoperable for an extended duration. The train was inoperable because of excessive leakage across the isolation valve (Valve EFHV0025) which separated the essential service water system from the normal service water system. The licensee determined that the leakage was caused by a misadjusted limit switch on the valve operator. The adjustment to ensure valve disk and valve seat are properly mated when a valve operator reaches the closed position was not correctly controlled by the maintenance program. Corrective actions to the maintenance program have been initiated. During the period of time that excessive seat leakage existed on Valve EFHV0025, the required essential service water isolation function would have been performed by the redundant essential service water Valve EFHV0023. The inspectors documented the Technical Specification violation in Section 4OA7 of this report. No additional findings of significance were identified. This LER is closed.

.2 (Closed) LER 05000483/2007-002-00, Manual Reactor Trip due to Inadequate Feedwater Control

On March 9, 2007, AmerenUE operations personnel manually tripped the reactor during a rapid reactor power reduction initiated to address a main condenser tube rupture. The licensee determined that a steam generator level transient, which occurred due to a mechanical failure of a main feedwater regulation valve positioner, necessitated the reactor trip. Corrective actions involved repairs to the condenser tube and the main feedwater regulation valve. The inspectors reviewed the LER and no findings of significance were identified. This LER is closed.

.3 (Closed) LER 05000483/2006-009-00, Inadequate Application of Technical Specifications Related to Main Steam Isolation Valves and Actuator

On January 26, 2007, AmerenUE reported that Callaway Plant Technical Specification 3.7.2 did not explicitly address main steam isolation valve actuator trains. The LER acknowledged that Technical Specification 3.7.2 had been inadequately applied for past instances of actuator train inoperability and that the NRC had issued a Green NCV for such maintenance in December 2004. This was documented as NRC Inspection Report NCV 05000483/2006012-03, Inadequate Operability Determination of a Degraded Main Steam Isolation Valve. Corrective actions involved requesting and receiving License Amendment 172 which was issued on June 16, 2006. Additional changes were also made to the FSAR and operating procedures. The inspectors reviewed the LER and no additional findings of significance were identified. This LER is closed.

4OA5 Other Activities

.1 (Discussed) NRC Temporary Instruction 2515/166, Pressurized Water Reactor Containment Sump Blockage

a. Inspection Scope

From April 2-12, 2007, the inspectors reviewed the licensee's implementation of plant modifications and design modification packages associated with their response to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors." The inspectors observed postinstallation work activities and reviewed various aspects of the on-going procedural changes. In addition, those changes were verified to be properly documented in accordance with the requirements of 10 CFR 50.59. At the completion of this inspection, the licensee was in the final installation stages of the new sump strainers and most of the changes associated with the modifications had not been completed.

The inspectors compared and evaluated the recirculation sump modifications to the original design basis using Temporary Instruction 2515/166 and referred to Regulatory Guide 1.82, Revision 0, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident."

As a result of the inspectors' questioning, the licensee developed a white paper to address the licensee commitment regarding evaluation and implementation of potential safety injection system modification based on downstream effects. The licensee determined that safety injection throttle valves are not susceptible to blockage; however, because there are key industry evaluations on the downstream effects which have yet to be completed, the potential to modify the safety injection system will be dependent on the results of those evaluations. Other commitments were reviewed by the inspectors, but their implementation dates were beyond the completion date of this inspection.

Two of the commitments were scheduled to be implemented at the end of Refueling Outage 15 and were associated with specific physical modifications (i.e. new sump strainers and debris barriers). From May 2-4, 2007, the resident inspectors observed the installation of sump strainers and debris barriers during their containment walkdown. The installation of the sump strainers and debris barriers were verified to be in accordance with design requirements.

At the end of the inspection, just 4 of the 22 commitments were able to be verified by the inspectors. Most of the licensee commitment completion dates are scheduled to occur after the outage end date. The Office of Nuclear Reactor Regulation will determine the adequacy of the sump modifications with respect to Generic Safety Issue 191, and the final review and acceptance of chemical and downstream effects will be completed later. This temporary instruction remains open.

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 (Closed) NRC Temporary Instruction 2515/150, Reactor Pressure Vessel and Vessel Head Penetration Nozzles

a. Inspection Scope

As part of the visual inspection activity, the resident inspectors reviewed one of the three bare metal visual videotapes to verify head cleanliness. No issues were identified.

During the inspection, the licensee conducted ultrasonic examinations on approximately 37 of the 78 control rod drive mechanism penetrations. During this volumetric inspection activity, the inspectors were able to observe portions of the ultrasonic examinations. In addition, the inspectors reviewed the completed examination reports on the 11 penetrations identified in the table in Section 1R08.1 of this report.

The inspectors raised a question with respect to extent of ultrasonic examination coverage based on operating stress levels. The licensee had implemented the approved Relaxation Request for Alternate Examination Coverage of the First Revised Order EA-03-009, which allowed a reduced examination volume to one inch below the lowest point at the toe of the J-groove weld and including all reactor pressure vessel head penetration nozzle surfaces below the J-groove weld that have an operating stress level of 20 ksi tension or greater.

The licensee provided Dominion Engineering Calculation C-4184-00-01, Callaway Upper Head CRDM Nozzle Welding Residual Stress Analysis," Revision 0, dated March 1, 2007. This calculation presented the elevations at which stresses decay to 20 ksi at the downhill, midplane, and uphill location of each nozzle, using as-designed geometry. The licensee chose to use the order-required 2.0 inch uphill dimension, but a

1.44 inch dimension for nozzles 1-5, a 1.1 inch dimension for nozzles 6-21, and a 1.0 inch dimension for nozzles 22-78. These dimensions were based on the calculated elevations at which the operating stresses decayed to 20 ksi.

The inspectors further verified that the qualified procedures used by the contractor (AREVA) to perform the ultrasonic examinations (identified in the attachment) clearly accounted for the calculated dimensions. During observation of the examinations, the inspectors verified that the procedures were being implemented by qualified Level II personnel. No indications, other than manufacturing type indications (e.g., machining), were identified. This temporary instruction is closed.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the results of the inservice inspection, containment sump modifications, and the reactor vessel head inspection to Mr. T. Herrmann, Vice President, Engineering, and other members of licensee management on April 12, 2007. The licensee acknowledged the issues and observations presented. It was also communicated to the licensee's management staff that the containment sump modification inspection could not be completed, and a final exit will occur at a later date pending NRR's final acceptance of the licensee's commitments to Generic Letter 2004-02.

On April 27, 2007, the inspectors presented the occupational radiation safety inspection results to Mr. T. Herrmann, Vice President, Engineering, and other members of his staff who acknowledged the findings.

On June 22, 2007, the resident inspectors presented the results of their inspection to Mr. C. Naslund, Senior Vice President and Chief Nuclear Officer and other members of his staff who acknowledged the findings.

On July 23, 2007, the resident inspectors presented a change to the results of their inspection Mr. D. Neterer, Superintendent of Operations, who acknowledged the change.

4OA7 Licensee-Identified Violations

The following violations of very low significance (Green) were identified by the licensee and are violations of NRC requirements, which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as noncited violations.

- The inspectors reviewed three examples of the failure to follow station procedures associated with access control to radiologically significant areas. Technical Specification 5.4.1 states that written procedures shall be established,

implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, "Quality Assurance Program Requirements," Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Appendix A, Section 7.e(1) stipulates procedures for access control to radiation areas. Procedure APA-ZZ-01004, "Radiological Work Standards," Revision 7, Section 4.3.1.a, states, "ENSURE you adhere to instructions on [radiological posting] sign and your radiation work permit." Section 4.3.1.c, states, "Do NOT defeat, remove or alter radiation protection boundaries, barricades, or radiological postings." Contrary to these requirements, on three occasions the licensee identified workers that did not adhere to the instructions on radiological posting signs and their radiation work permit. Specifically, on April 3, 2007, four contract workers did not adhere to the instructions when they were observed entering the posted radiation/contamination area in street clothing. On April 8, 2007, radiation protection personnel discovered four contract workers that did not adhere to the instructions in a radiation/contamination area when they entered the area without protective clothing. Additionally, on April 5, 2007, a worker was observed moving radiological boundaries. The inspectors determined that the finding was of very low safety significance because: (1) it was not an ALARA finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. These events are in the licensee's corrective action program as CARs 200703189, 200703333, and 200703492.

- Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be established to assure that conditions adverse to quality, such as deviations and nonconformances are promptly identified and corrected. Technical Specification 3.4.2 listed the minimum allowed reactor coolant system temperature while critical as 551 degrees Fahrenheit. On October 23, 2003, a plant transient resulted in reactor coolant system temperature decreasing approximately 2 degrees below 551 degrees Fahrenheit. The Technical Specification action statement allowed 30 minutes to be in Mode 2 with a subcritical reactor. The transient caused the reactor to become subcritical. The operators procedural guidance expected the operators to be able to control reactor coolant system temperature and maintain reactor power stable using control of steam loads to establish a reactor critical condition of about 5 e^{-6} amps. In a 20 minute period the reactor transitioned through five decades of power decrease due to the transient. No attempts were made to restore power and after two hours the procedural requirement to insert control rods was implemented. Thirty eight days later a corrective action document (CAR) identified the Technical Specification entry and unplanned power decrease.

  Contrary to the above, identification in the form of an operator log entry and condition adverse to quality document (CAR) were not promptly generated to capture and correct the cause and impact of the transient. Training improvements associated with Mode 2 operations were delayed until 2007 when CAR 200702601 was initiated. This finding is of very low safety significance because the finding does not contribute to both the likelihood of a

reactor trip and the likelihood that mitigating equipment or functions will not be available. The licensee's corrective action program has now addressed the plant operation issues.

- Technical Specification 3.7.8 requires that the essential service water system be maintained operable. Contrary to this requirement, on February 7, 2007, the licensee identified that one essential service water train had been rendered inoperable for an extended duration due to a misadjusted limit switch on the valve operator for Valve EFHV0025. This adjustment, to ensure valve disk and valve seat are properly mated when a valve operator reaches the closed position, was not correctly controlled by the maintenance program. This finding is of very low safety significance because it did not represent an actual loss of safety function of a single train for greater than its allowed outage time and was not risk significant due to seismic, flooding, or a severe weather event. Corrective actions to address the maintenance program deficiency have been initiated. This finding was discussed in Section 4OA3 for LER closure.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Brandes, Design Engineer
B. Corder, System Engineer
F. Diya, Plant Director
J. Doughty, Boric Acid Corrosion Control Engineer
R. Farnam, Manager, Radiation Protection
K. Gilliam, Supervisor, Radiation Protection
T. Herrmann, Vice President, Engineering
B. Huhmann, Supervisor, Engineering
L. Kanuckle, Manager, Quality Assurance
R. Lutz, Design Engineer
S. McCracken, Welding Engineer
S. Meyer, Supervising Engineer, Quality Assurance
B. Montgomery, Inservice Inspection Engineer
T. Moser, Manager, Plant Engineering
D. Neterer, Manager, Operations
T. Parker, Trainer, Radiation Protection
S. Petzel, Engineer, Regional Regulatory Affairs
S. Reed, Supervisor, Engineering
D. Stepanovich, Supervising Engineer, Technical Support

Other:

R. Underwood, ANII, Hartford Steam Boiler Inspection and Insurance Company of Connecticut

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000483/2007003-01	NCV	Ineffective Corrective Actions to Evaluate the Design Basis for an Ultimate Heat Sink Workaround (Section 1R04)
05000483/2007003-02	NCV	Failure to Implement Foreign Material Controls for the Refueling Cavity with Reactor Head Removed (Section 1R20)
05000483/2007003-03	NCV	Failure to Identify and Correct Essential Service Water Pipe Wall Thinning (Section 4OA2)

Closed

05000483/2007-001-00	LER	Single Train Inoperability in the Essential Service Water System Due to Inadequate Valve Closure Settings (Section 4OA3)
05000483/2007-002-00	LER	Manual Reactor Trip Due to Inadequate Feedwater Control (Section 4OA3)
05000483/2006-009-00	LER	Inadequate Application of Technical Specifications Related to Main Steam Isolation Valves and Actuator (Section 4OA3)
2515/150	TI	Reactor Pressure Vessel and Vessel Head Penetration Nozzles (Section 4OA5)

Discussed

2515/166	TI	Pressurized Water Reactor Containment Sump Blockage (Section 4OA5)

DOCUMENTS REVIEWED

Section 1R08: Inservice Inspection Activities

Procedures

AUE-UT-98-1, Manual Ultrasonic Examination of Ferritic Piping Welds, Revision 1

EDP-BB-01341, Steam Generator Surveillance, Revision 1

EDP-ZZ-01003, Inservice Inspection Program, Revision 21

EDP-ZZ-01004, Boric Acid Corrosion Control, Revision 4

ETP-BB-01309, Steam Generator Eddy Current Testing Acquisition and Analysis Guidelines, Revision 17

MTW-ZZ-WP003, Control of Welding Filler Materials, Revision 0

PCI-WCP-3, Welding Material Control, Revision 8

PDI-UT-1, PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds, Revision C

QCP-ZZ-01002, Qualification of Quality Control Personnel for Inspection Activities, Revision 16

QCP-ZZ-05000, Liquid Penetrant Examination, Revision 17

QCP-ZZ-05010, Magnetic Particle Examination, Revision 13

QCP-ZZ-05042, Visual Examination to ASME VT-3, Revision 16

QEP 20.05, Welding Material Control, Revision 5

AREVA Procedures

54-ISI-604-002, Automated Ultrasonic Examination of Open Tube Reactor Pressure Vessel Closure Head Penetrations, January 30, 2007

54-ISI-603-003, Automated Ultrasonic Examination of Reactor Pressure Vessel Closure Head Penetrations Containing Thermal Sleeves, January 20, 2007

Welding Procedure Specification, Revision, and Procedure Qualification Record

8MN-GTAW/SMAW, Revision 15, 063 and 600
8-F43-GTAW, Revision 4, 481 and 690
3-8/52-TB MC-GTAW-N638, Revision 7, 677, 750, 770
8 MC-GTAW, Revision 10, 046, 062, 600

Drawings

10017D79, Pressurizer Surge Nozzle Welding Layer Process Map, Revision 1

10017D80, Pressurizer Spray Nozzle Welding Layer Process Map, Revision 1

10017D81, Pressurizer Safety Nozzle Welding Layer Process Map, Revision 1 (2-TBB03-3-A-W)

10018D02, Pressurizer Safety Nozzle Welding Layer Process Map, Revision 1 (2-TBB03-3-B-W)

10018D01, Pressurizer Safety Nozzle Welding Layer Process Map, Revision 1 (2-TBB03-3-C-W)

10018D03, Pressurizer Relief Nozzle Welding Layer Process Map, Revision 1 (2-TBB03-4-W)

10019513, ASME/Axial/Circ EDM Standard, Revision 1

9043947B, Wear Flaw Calibration Standard As-built Drawing, Revision 0

Callaway Action Requests

200510316	200600295	200601263
200602580	200603745	200606821
200610436	200702384	200703611

Nonconformance Reports

PCI Energy Services, 900708-05

Certified Material Test Reports (CMTRs for Welding Materials)

3/32" ER 309/309L-16, Lot 5F10C-10A
5/32" ER 309L-16, Lot 9D14E-14A
5/32" E-7018, Lot 2E2 15A01
1/8" E-7018, Lot 4K226C02
3/32" E-7018, Lot 2A507C01
3/32" x 36" E309L, Lot CT7208

Miscellaneous

Training and testing qualification/certification packages for nondestructive examination personnel

Callaway Plant 10 CFR 50.55a Request for Relief - Proposed Alternatives for Application of Structural Weld Overlays to Pressurizer Nozzle Welds, Attachment to ULNRC-05292

Dominion Engineering, Inc. Letter L-4183-00-1 to Mr. Gregory A. Harris, AmerenUE, regarding "Preliminary JCO of ESW Pump-House Piping Near V094," dated March 16, 2007

Reedy Engineering, Inc. Letter UEL 07-002 to Mr. Richard Lutz, AmerenUE regarding "Pipe Wall Thinning," dated March 16, 2007

Callaway Plant Inservice Inspection Program Plan, October 12, 1994

Operating Instruction 55-010053-01, Narrow Groove Gas Tungsten Arc Welding - Heavy Wall Stainless Steel Piping, July 6, 2005

Calculation C-4181-00-01, Callaway Upper Head CRDM Nozzle Welding Residual Stress Analysis, Revision 0

Weld Overlay Process Traveler Including Sulfur Mitigation for Pressurizer Surge Nozzle - TBB03

Weld Overlay Process Repair Traveler, "Manual Repair of Base Metal"

ASME Code Case N-513-1

ASME Code Case N-504-2

ASME Code Case N-638-1

NRC Generic Letter GL 90-05, "Guidance for Performing Temporary Non-Code Repair of Class 1, 2, 3 Piping"

Engineering Information Record 5062980-00, Technical Summary of Callaway Plant Replacement Steam Generator Pre-service Eddy Current Inspection, March 2005

Engineering Information Record 9042136-00, Callaway Unit 1, 1R15- EPRI, Appendix H, Eddy Current Technique Review, March 30, 2007

Engineering Information Record 9034988-001, Callaway EOC 15 Steam Generator Degradation Assessment, April 9, 2007

UEND-Strategy-02. Steam Generator Strategic Plan for Callaway, 2006

Examination Technique Specification Sheet ETSS #1, Revision 0

Section 1R12: Maintenance Effectiveness

Callaway Action Requests

200600469	200603749	200603883	200605432
200702160	200703132	200704160	200604407
200705059	200705132		

Procedures

EDP-ZZ-01128, Appendix 2, Summary of SSC Performance Criteria, Revision 5

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

EDP-ZZ-01129, Callaway Plant Risk Assessment, Revision 12
OTN-BB-00002, Reactor Coolant System Draining, Revision 35
OTO-EJ-00001 Loss of Residual Heat Removal Flow, Revision 24

Callaway Action Requests

200703323
200703378

Miscellaneous

Callaway Refuel 15 Analysis, February 15, 2007

Technical Specification Bases B3.9.4 discussion of administrative controls allowing an open equipment hatch during core alterations

Section 1R20: Refueling and Outage Activities

Procedures

ESP-ZZ-00001, Rod Drop Testing Using the Plant Computer, Revision 14

ESP-ZZ-00009, Moderator Temperature Coefficient Measurement at Zero Power, Revision 21

ESP-ZZ-00030, Core Reactivity Balance Comparison by Boron Endpoint Measurement, Revision 1

OTN-BB-00001, Reactor Coolant System - IPTE for Vacuum Fill of the Reactor Coolant System, Revision 21

OTN-BB-00002, Reactor Coolant System Draining, Revision 35

OTO-EJ-00003, Loss of RHR While Operating at Reduced Inventory or Mid-loop Conditions, Revision 0

OTO EJ-00001, Off-Normal Operating Procedure - Loss of RHR Flow, Revision 24

OTG-ZZ-0003, Plant Startup Hot Zero Power to 30 Percent Power - IPTE, Revision 36

OTG-ZZ-00006, Plant Cooldown Hot Standby to Cold Shutdown, Revision 44

Callaway Cycle 16 Reload Safety Evaluation, Revision 1, March 2007

Callaway Action Requests

CAR 200604465

Section 1R22: Surveillance Testing

Procedures

OSP-SF-00003, Pre-core Alteration Verifications, Revision 15

ETP-ZZ-0035, Refueling Performance - IPTE, Revision 27

APA-ZZ-00365, Callaway Plant Lifting Operations, Revision 0

ESP-SM-01001, Containment Leakage Rate Test Program, Revision 20

OSP-EF-LL071, Containment Isolation Valve Leakage Rate Test, Revision 8

OSP-EJ-V0002, Residual Heat Removal and Reactor Coolant System Check Valve Inservice Test, Revision 24

OSP-EJ-V002A, Residual Heat Removal Pump Containment Sump Suction and Residual

Water Storage Tank Suction Inservice Test, Revision 23

ISL-NF-NB01B, NB01 Degraded and Undervoltage to Load Shedding/Emergency Load Sequencing Channel II, Revision 18

OSP-BM-V0001A, Steam Generator Blowdown System Valve Operability, Revision 12

Section 2OS1 and 2OS2: Access Controls to Radiologically Significant Areas and ALARA Planning and Controls

Callaway Action Requests

200608084	200609985	200610486	200701211
200701457	200701832	200701893	200701940
200702127	200702750	200702886	200702899
200702939	200702967	200703189	200703209
200703333	200703385	200703467	200703479
200703492	200704362	200704363	200704509
200704514			

Audits and Self-Assessments

AP07-001, Radiation Protection

Radiation Work Permits

05516939520, Removal of old flux map detectors from the seal table
06116789, Inspect the bottom of the reactor vessel
751520DECONLWR, Decon the lower refueling cavity

Work in Progress Reviews

790560HRALLRT, Local leak rate tests
07000690100, Build/Remove scaffolding
06114483, Replace Essential Service Water Supply and Return Piping, Revision 1
06114483, Replace Essential Service Water Supply and Return Piping, Revision 2

Procedures

APA-ZZ-01000, Callaway Plant Radiation Protection Program, Revision 24
APA-ZZ-01004, Radiological Work Standards, Revision 7
HDP-ZZ-01500, Radiological Postings, Revision 22
HTP-ZZ-01203, Radiological Area Access Control, Revision 34
HTP-ZZ-06001, High Radiation/Very High Radiation Area Access, Revision 25
HTP-ZZ-06028, Radiological Controls for Pools that Contain or Store Spent Fuel, Revision 5

Section 4OA2: Identification and Resolution of Problems

Procedures

APA-ZZ-00500, Appendix 17, Screening Process Guidelines, Revision 0
OTN-EF-00001, Essential Service Water System, Revision 31

Callaway Action Requests

200306252	200505716	200604872	200607252
200703279	200703584		

Miscellaneous

Calculation EF-54, S726-Steam Generator Team, Revision 2

Vendor Manual M-015-U0049, Marley Cooling Tower Operating Manual, Order Number 12-451

Quality Assurance Surveillance Report SP07-025, Evaluate essential service water repair/replacement activities, May 21, 2007

Operability Determination 200704465, Acceptability of Essential Service Water System for Cycle 16 Operation, May 4, 2007

Section 4OA5: Other Activities

Calculations

EC-PCI-WC/CAL-6002/6003-1001 (Coversheet), AES Documents No. PCI5304-S01, Revision 1

Structural Evaluation of the Containment Sump Strainers, Revision 0

PCI-53040S01, Structural Evaluation of the Containment Sump Strainers, Revision 1

EJ-29, NPSH Margin for Residual Heat Removal Pumps at Transition to Recirculation when NPSH Margin is at its Minimum Value, Revision 1

EN-13, NPSH Margin for Containment Spray Pumps at Transition to Recirculation when NPSH Margin is at its Minimum Value, Revision 0

BG-75 ADD 2-00, Impact of MP 06-0003, Replacement Containment Recirculation Sump Strainers, and MP 06-0027 TSP Basket Relocation on BG-75, Revision 0

BN-21 ADD 2, Impact of MP 06-0003, Replacement Containment Sump Strainer on BN-21 Revision 0

BN-22 ADD 2, Impact of MP 06-0003, Replacement Containment Sump Strainer on BN-22 Revision 0

EM-19 ADD3, Impact of MP 06-0003, Replacement Containment Recirculation Sump Strainers, and MP 06-0027, TSP Basket Relocation on EM-19, Revision 0

Evaluations and Engineering Reports

MP-0003, Engineering Disposition - Replacement Containment Emergency Recirculation Strainers, Revision 0

MP 06-0003, Engineering Screen: Hazards Review - Replacement Sump Strainers, Revision 0

MP 06-0003, Engineering Screen: Programs Review - Replacement Containment Sump Strainers, Revision 0

MP 06-0003, Recommended Preventative Maintenance, Revision 0

Maintenance Procedures

MP 06-0027, Relocate Trisodium Phosphate Dodecahydrate Baskets, Revision 0

MP 06-0029, Remove Instrumentation EJ-LE-7A and EJ-LE-8A from the Containment Recirculation Sumps, Revision 0

MP 06-0047, Debris Barrier in Containment Loop Access Doors A and D, Revision 0

Procedures

APA-ZZ-00801, Foreign Materials Exclusion, Revision 24
OSP-EJ-V0002, RHR and RCS Check Valve Inservice Test - IPTE, Revision 24
OSP-EJ-00003, Containment Recirculation Sump Inspection, Revision 5
OSP-EN-V0002, Containment Spray Encapsulated Isolation Valve Inservice Test, Revision 14
OSP-SA-00004, Visual Inspection of Containment for Loose Debris, Revision 18

Applicability Determination

MP 06-0003, Replace containment sump screens (FEN01A/B) with strainers, Revision 0

50.59 Screens

MP 06-0003, Replace Callaway Containment Emergency Recirculation Sump Strainers, Revision 0

MP 06-0029, Modify the Containment Recirculation Sump Level Instrument Loops EJL0007 and EJL0008, Revision 0

50.59 Evaluation

MP 06-0029, Modify Recirc Sump Level Sensor, Revision 0

Callaway Action Requests

200304409
200606889

Engineering Change Notices

C-1016-00024	C-131-05671	C-131-05672
C-131-05673	C-131-05674	C-131-05675
C-131-05677		

Presentations & Memorandums

Brief Overview of Replacement CTMT Sump Strainers, September 8, 2006

Callaway Plant, Unit 1 - Issuance of Amendment No. 180 Regarding Containment Sump Strainers and Relocating TSP-C Baskets (TAC No. MD2363), February 21, 2007

White paper discussing SI throttle valve modification at Callaway, April 6, 2007

Docket Number 50-483 Callaway Plant Unit 1 Union Electric Co. Facility Operating License NPF-30 Commitment Status for NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors;" ULNRC-05235, December 12, 2005

Docket Number 50-483 Callaway Plant Unit 1 Union Electric Co. Facility Operating License-NPF-30 Response to Generic Letter 2004-02: "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors;" ULNRC-05295, May 30, 2006

Docket Number 50-483 Callaway Plant Unit 1 Union Electric Co. Facility Operating License NPF-30 Response to Generic Letter 2004-02: "Potential Impact of Debris Blockage on Emergency Recirculation During Design;" ULNRC-05194, September 1, 2005

Docket Number 50-483 Callaway Plant Unit 1 Union Electric Co. Facility Operating License NPF-30 Response to Generic Letter 2004-02: "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors;" ULNRC-05124, March 7, 2005

ATTACHMENT 6

UNITED STATES
NUCLEAR REGULATORY COMMISSION
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

August 7, 2007

Ex 7C

(b)(7)c

SUBJECT: ALLEGATION NO. RIV-2007-A-0028

Dear (b)(7)c

This refers to my April 11, 2007, letter which acknowledged receipt of your concerns regarding the Callaway Plant. Additionally, I advised you that the NRC would initiate actions to review your concerns related to a couple of operational events that may not have been adequately investigated and to the safety conscious work environment at Callaway.

The NRC has completed its inspection of your concerns. The enclosed "Resolution of Concerns" documents each of your concerns and summarizes the NRC resolution. In summary, two of your concerns were substantiated.

Thank you for informing us of your concerns. We believe that our actions in this matter have been responsive to your concerns. We take our safety responsibilities to the public very seriously and will continue to do so within the bounds of our lawful authority. Unless the NRC receives additional information that suggests that our conclusions should be altered, we plan no further action and we consider this case closed.

Should you have any additional questions regarding our resolution, please contact Mr. Vincent Gaddy, Chief, Reactor Projects Branch B, at 800-952-9677 Extension 141, or you can call me at 800-952-9677 Extension 245, Monday - Friday between 8:00 a.m. and 4:30 p.m. Central time.

Sincerely,

Harry A. Freeman
Senior Allegation Coordinator

Enclosure:
Resolution of Concerns

cc via Regular Mail:
(b)(7)c

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Information in this record was deleted in accordance with the Freedom of Information Act, Exemptions 7C
FOIA/PA 2009-0042

C/4

Concern 1

On October 23, 2003, while shutting down to Mode 3, the RCS temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report until 38 days later when identified by a training instructor. This condition report did not address why the control rods were not inserted until 90 minutes following the reactor shutting down. A later condition report documenting the issue (CARS (b)(7)c [redacted] was assigned a significance Level 4. The concern individual (CI) expressed concern that this significance level was too low. The condition also was not documented in the shift supervisor log.

Resolution 1 - Substantiated

In your letter dated April 20, 2007, you advised that on March 20, 2007 you presented CARS (b)(7)c [redacted] to the Reactivity Management Review Committee and that the CARS significance was rescreened at Level 3.

The NRC reviewed computer point trend data, operator logs, Technical Specification requirements, corrective action documents and operator procedural guidance.

The October 23, 2003, plant transient resulted in RCS temperature decreasing approximately 2 degrees F. below the Technical Specification 3.4.2 minimum allowed RCS temperature while critical. Fifteen minutes late a mode change from Mode 2 (Startup) to Mode 3 (Hot Standby) occurred. This Technical Specification limiting condition for operation entry and mode change were not documented per requirements. The operators procedural guidance expected to be able to control RCS temperature and reactor power stable using control of steam loads to establish a reactor critical condition of about 5 E -6 amps. The reactor did become subcritical without immediate operator action and did transition through five decades of power decrease due to the transient in a 20-minute period. No attempts were made to restore power and after 2 hours, the procedural requirement to insert control rods was implemented. Thirty-eight days later a corrective action document (CAR) identified the discrepancy.

The licensee recently initiated CARs (b)(7)c [redacted] and (b)(7)c [redacted] which highlighted the need to re-review the 2003 event to ensure procedural content and operator training was adequate to respond to future events. These corrective action documents have been assigned significance Level 3 and the actions prescribed have the potential to address the 2003 inadequacies.

The concerns described in Allegation RIV-2007-A-0028, and confirmed by inspection, were contrary to the requirements of the licensee's Technical Specification bases and operating procedures and were an initiating events reactor restart concern. The NRC plans to document this violation in NRC Inspection Report 2007-003.

Concern 2

The operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. [The CI believes this delay may have been intentional to avoid scrutiny of the crew's actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. The CI states that purposefully delaying inserting the control rods, not logging entry into Technical Specifications and not documenting significant operational transients in the corrective action program are dishonest and negligent omissions.]

Resolution 2 – Partially Substantiated

The NRC technical staff reviewed computer point trend data, operator logs, Technical Specification requirements, corrective action documents and operator procedural guidance as they related to the first sentence of Concern 2. The technical staff also reviewed the information to determine whether there were indications of misconduct that would warrant an investigation by the Office of Investigations.

The technical staff determined that the reactor did become subcritical without immediate operator action and did transition through five decades of power decrease due to the transient in a 20-minute period. No attempts were made to restore power and after 2 hours, the procedural requirement to insert control rods was implemented. This time delay was not prudent and did suggest that the operators may not have exercised optimum reactivity management and may not have had adequate plant awareness. The inspector's review of operating procedures did not find any timeliness guidance on performing the steps to insert the control rods.

Concern 3

The licensee does not have a healthy SCWE. The environment for raising concerns was poor for an issue brought forward in May 2005 concerning when the FSAR requires the isolation of the Safety Injection Accumulators. The problem was not promptly identified and corrected by the operations shift manager, the operations manager, the employee concerns program manager, or quality assurance organization or regulatory affairs. Action was only taken after the CI stated he was planning to address the issue with the NRC.

Resolution 3 – Not Substantiated

As followup to this concern, the inspectors interviewed several Operations first line supervisors, reviewed computer point trend data, operator logs, CARs (b)(7)c and (b)(7)c FSAR Section 5.2.2.10.4 and Technical Specification requirements, corrective action documents and operator procedure guidance.

To determine whether a healthy environment exists today, the inspectors interviewed several Operations department first line supervisors. All responses indicated that the Operations shift manager, operations managers, ECP manager and other managers were not a factor in their likelihood to self identify and follow through actions to correct discovered problems. Each also stated that problem identification highlighting their own or crew errors would also not be a factor in their likelihood to participate in the corrective action program. Two individuals

stated they had recently made personal errors yet were encouraged to develop the corrective actions. The individuals interviewed believed that the SCWE had improved since 2003 and 2005. The licensee had an independent contractor, Synergy, perform SCWE surveys in 2003, 2005, and 2007. The 2003 and 2005 survey results were completed prior to the respective events provided by the alleger. These did provide a focus on the Operations department but did not indicate an unhealthy environment for raising concerns. The surveys showed that overall plant SCWE had improved to be "very good to strong" in 2005 and 2007. Several departments were noted as needing improvement but Operations department was not one of them.

Concern 4

You were subjected to employment discrimination, in the form of having your [b)(7)c] [b)(7)c] in [b)(7)c] for having raised and pursued resolution of an issue involving the isolation of the safety injection accumulators in August 2005.

Resolution 4

Based upon your request, no action was taken to address this concern.

bcc w/Resolution of Concerns:
Allegation File

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

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(b)(7)c

☐ Agent
☐ Addressee
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(b)(7)c

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AUG 1 4 2007

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4. Restricted Delivery? (Extra Fee) ☐ Yes

7-A-0028

(b)(7)c

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OFFICE	RIV:SAC	C:RPBB	SAC	
NAME	HAFreeman	VGGaddy	HAFreeman	
		VGG		
DATE	08/03/2007	08/6/2007	08/06/2007	

OFFICIAL RECORD COPY

ATTACHMENT 7

ARB DISPOSITION RECORD	Allegation Number: RIV-2007-A-0048

Facility Name:	Callaway	Docket Number:	
Functional Area:	Power Reactor		
Responsible Division:	DRP	ARB Date:	09/27/2007
Received Date	30 Days	150 Days	180 Days
08/30/2007			

Purpose of the ARB:	Discuss the concerned individual's (CI) rebuttal letter for allegation files RIV-2007-A-0028 and RIV-2007-A-0048. The CI's rebuttal letter was addressed to a US Senator with a copy provided to the NRC SRI. Heller talked to the CI on September 7, 2007 and was informed that the letter was been provided to a worker assigned to the Senator's Springfield office on or about August 15, 2007. As of this ARB, RIV has not received any indication that the letter has been forwarded from the Senator's office to the NRC. A potential reason for the delay is because the CI addressed the rebuttal letter to a US Senator that does not represent the state where Callaway is located
Basis for Another ARB:	

REFERRAL

Does Alleger Object to Referral ☐ Yes ☐ No ☐ N/A

If any of the following factors apply, an allegation shall not be referred to the licensee.

- ☐ Information cannot be released in sufficient detail to the licensee without compromising the identity of the alleger of confidential source.
- ☐ The licensee could compromise an investigation or inspection because of knowledge gained from the referral.
- ☐ The allegation is made against the licensee's management or those parties who would normally receive and address the allegation.
- ☐ The basis of the allegation is information received from a Federal or State agency that does not approve of the information being released in a referral.

ARB PARTICIPANTS

Chairman:			
AVegel	DChamberlain	RDeese	MPeck (Via Phone)
DWhite	MVasquez	KFuller	JWalker
JHeller	AFairbanks	DDumbacher (Phone)	

Concern #	1	Discipline	Reactor Department Code
		Operations	Operations
Responsible Branch	Select...	Closed Number	

Concern Description

Contention 1 is from Concern 1 of RIV-2007-A-0028. Basically the CI contents that an operating crew (in 2003) lost control of core reactivity and left the control rods withdrawn for 90 minutes. The CI believes the control rods were not inserted so the crew did not have to

A/3

admit to upper management that the crew lost control of the reactor. The CI has provided reasons why s/he believes that the crew's action should be the subject of an OI investigation. However the CI has not provided a reason why the crew's actions were unsafe or failed to comply with the licensee's procedures or NRC's requirements.

Applicable Requirement

none - the results of the inspection for Concern 1 of RIV-2007-A-0028 demonstrated that the crew followed the licensee's procedures, there was not a violation of NRC regulations, and there was not a safety problem or a reactivity problem associated with leaving the control rods withdrawn for 90 minutes.

Safety Significance N/A

Risk

see discussion in regulatory requirements

Check if question is applicable to the concern.

- [ ] Is it a declaration, statement, or assertion of impropriety or inadequacy?
- [ ] Is the impropriety or inadequacy associated with NRC regulated activities?
- [ ] Is the validity of the issue unknown?

If all of the above statements are checked, the issue is an allegation.

Action	Assigned Branch	Assigned Date	Planned Date
Other (Describe)	Select...		

Comments

items for the arb to consider

1. RPBB has performed an independent review of the CI's rebuttal letter and the previous inspection results, is a second inspection necessary.

2. independence of the author preparing the response and the signature authority for the response to the concerned individual.

Action	Assigned Branch	Assigned Date	Planned Date
Other (Describe)	RPBB	09/24/2007	09/27/2007

Comments

RPBB to review how we addressed all concerns in RIV-2007-A-0028 and bring back to special ARB.

Action	Assigned Branch	Assigned Date	Planned Date
Other (Describe)	RPBB	09/27/2007	

Comments

(1) ACES to assign new allegation number (RIV-2007-A-0096).

(2) RPBB to draft violation and provide a copy to OI/ACES (planned completion date: 10/5/07).

(3) OI to investigate -High Priority [Rationale- MD 8.8 exhibit 3, (B) (ii) (a)].

(4) In parallel with the OI interview with alleger, ACES to discuss at Regional Panel, before discussing with OE to determine if we are opening a previous enforcement action. (Inspection Report 2007003, page 35, issued August 2, 2007).

(5) RIV to do a self-assessment to determine how we missed bringing issue back (see June 18, 2007 ARB minutes for RIV-2007-A-0028).

(6) ACES to discuss, as necessary, with OE the age of this potential violation to ensure that 5- year statue of limitations is highlighted.

Additional Comments

Note: transfer all concerns to the new allegation file, the date of the new allegation file is 9/27/07, which is the date that the region determined that we may not have completely answered the alleger's concerns.

Concern	2	Discipline	Reactor Department Code
		Maintenance	Modifications
Responsible Branch	Select...	OI Case Number	

Concern Description

Contention 2 is from Concern 1 of RIV-2007-A-0048. Basically the CI contents that the licensee failed to implement timely corrective action for damage to the RHR suction relief valve following repeated opening of the pressurizer PORV. The CI provided several reasons why s/he believes that the licensee's untimely corrective action demonstrated that the staff is understaffed and under funded. However the CI has not provided any reasons why the delayed corrective action was unsafe or failed to comply with the licensee's procedures or NRC requirements.

Regulatory Requirement

none - Basically the inspection for Concern 1 of RIV-2007-A-0048 determined that the delay did not increase the risk to the plant.

Safety Significance: N/A

Basis

see discussion in regulatory requirements

Check if question is applicable to the concern.

- [x] Is it a declaration, statement, or assertion of impropriety or inadequacy?
- [x] Is the impropriety or inadequacy associated with NRC regulated activities?
- [x] Is the validity of the issue unknown?

If all of the above statements are checked, the issue is an allegation.

Action	Assigned Branch	Assigned Date	Planned Date
Contact Alleger	**ACES**	09/24/2007	

Comments: ACES/RPBB to contact alleger, to discuss previous NRC actions taken on this issue including basis for our conclusions and provide opportunity for the CI to provide additional information.

Additional Comments

(1) In a phone call to the alleger on 9/26/07, ACES/RPBB explained/provided an overall summary of the NRC's assessment of the licensee's actions related to the RHR suction relief valve.

(2) Response letter to alleger is final action on this Concern. (Director DRP to sign letter)

Concern	3	Discipline	Reactor Department Code
		Select...	Select...

Responsible Branch	Select...	CI Case Number	

Concern Description

Contention 3 was not previously captured in the allegation program or the subject of a written response to the CI. The CI is using a problem associated with a non-safety related system that was retired in place as an example that the licensee corrective action system is not functioning properly. Since the licensee implemented only one corrective action system, the problem was documented within the corrective action problem and apparently not fixed. The CI contends that the failure of the corrective action program to fix a non-safety related system problem demonstrates the corrective action program is not functioning properly.

Regulatory Requirement

none - Basically when this issue was first discussed with the resident inspector, the CI was informed that we do not use the failure of the corrective action program to fix a non-safety related system as demonstration that the corrective action program is not functioning properly.

Safety Significance N/A

Basis

see discussion in regulatory requirements

Check if question is applicable to the concern.

- ☐ Is it a declaration, statement, or assertion of impropriety or inadequacy?
- ☐ Is the impropriety or inadequacy associated with NRC regulated activities?
- ☐ Is the validity of the issue unknown?

If all of the above statements are checked, the issue is an allegation.

Action	Assigned Branch	Assigned Date	Planned Date
Other (Describe)	ACES	09/24/2007	

Comments ACES/RPBB to provide a written response that captures the information verbally provided by the resident inspector and provide an overall summary of the NRC's assessment of the licensee's Corrective Action Program (PI&R crosscutting issue, PI&R inspection results). Discuss this with Concern 2, when contacting the alleger.

Additional Comments

(1) In a phone call to the alleger on 9/26/07, ACES/RPBB explained/provided an overall summary of the NRC's assessment of the licensee's Corrective Action Program.

(2) Response letter to alleger is final action on this Concern. (Director DRP to sign letter).

ATTACHMENT 8

CASE No. 4-2007-049

United States
Nuclear Regulatory Commission

Report of Investigation

CALLAWAY PLANT:

FAILURE TO DOCUMENT A TEMPERATURE TRANSIENT BY CONTROL ROOM PERSONNEL

Office of Investigations

Reported by OI:RIV

A/1

Title: CALLAWAY PLANT

FAILURE TO DOCUMENT A TEMPERATURE TRANSIENT BY CONTROL ROOM PERSONNEL

Licensee:

Union Electric Company
P.O. Box 620
Fulton, MO 65251

Docket No.: 50-0483

Allegation No.: RIV-2007-A-0096

Case No.: 4-2007-049

Report Date: May 9, 2008

Control Office: OI:RIV

Status: CLOSED

Reported by:

Crystal Holland

Crystal D. Holland, Senior Special Agent
Office of Investigations
Field Office, Region IV

Reviewed and Approved by:

Darrell B. White, Director for
Office of Investigations
Field Office, Region IV

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SYNOPSIS

This investigation was initiated by the Nuclear Regulatory Commission (NRC), Office of Investigations (OI), Region IV (RIV), on September 28, 2007, to determine if control room personnel at Callaway Plant (Callaway) willfully failed to document a temperature transient that occurred on October 21, 2003.

Based on the evidence developed during the investigation, OI:RIV determined the allegation that control room personnel at Callaway willfully failed to document a temperature transient on October 21, 2003, was not substantiated.

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TABLE OF CONTENTS

Page

SYNOPSIS 1

TESTIMONIAL EVIDENCE 5

DOCUMENTARY EVIDENCE 7

DETAILS OF INVESTIGATION 9

- Applicable Regulations 9
- Purpose of Investigation 9
- Background 9
- Coordination with NRC Staff 9
- Agent's Analysis 10
- Conclusion 13

SUPPLEMENTAL INFORMATION 15

LIST OF EXHIBITS 17

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TESTIMONIAL EVIDENCE

(b)(7)c	Exhibit
	 20
	 13
	 17
	2
	 19
	 22
	 15
	 18
	 21
	 23
	 14
	 16

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DOCUMENTARY EVIDENCE

Exhibit

CHART: NN11 Outage (MODE 2/turbine trip), dated October 21, 2003 3

CHART: NN11 Outage (100 minute delay), dated October 21, 2003 4

Callaway Action Request System, Action Request No. (b)(7)c Discover Date November 28, 2003 5

Cars Final Report, CAR No. (b)(7)c Close Date January 15, 2004 6

Email from (b)(7)c to OI:RIV, Subject: Callaway – Rods Withdrawn Investigation, dated November 6, 2007 7

Email from (b)(7)c to OI:RIV, Subject: Allegation RIV-2007-A-0096, Concern 1 with attachments, dated December 7, 2007 8

Callaway Administrative Procedure, Corrective Action Program, APA-ZZ-00500, Revision 34, dated March 20, 2003 9

Callaway Operations Department Procedure, Operations Department – Code of Conduct, OPD-ZZ-00001, Revision 016, dated September 10, 2003 10

Callaway Operations Surveillance Procedure, Shutdown Margin Calculation, OSP-SF-00001, Revision 026, dated April 23, 2002 11

Callaway Operations Procedure, Reactivity Management Program, APA-ZZ-01300, Revision 000, dated January 23, 2001 12

Email from (b)(7)c to (b)(7)c Subject: RE: CARS (b)(7)c, dated January 15, 2004 24

Callaway Action Request System, Action Request No. (b)(7)c Discover Date October 20, 2003 25

Cars & Action Full Detail, CAR No. (b)(7)c Discovery Date October 22, 2003 26

Work Order No. (b)(7)c dated October 21, 2003 27

Callaway Off-Normal Operating Procedure, Loss of Safety Related Instrument Power, OTO-NN-00001, Revision 006, dated October 9, 2002 28

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Callaway Off-Normal Operating Procedure, Loss of Letdown, OTO-BG-00001, Revision 4, dated October 23, 1995 29

Callaway Operations Department Procedure, Operations Department Narrative Logs, OPD-ZZ-00006, Revision 008, dated October 27, 1999 30

Callaway Procedure Reactor Coolant System, B342 Minimum Temperature for Criticality, undated 31

Callaway Procedure Electrical Power Systems, 3.8.7 Inverters - Operating, Amendment No. 133, undated 32

Callaway Shift Assignments: Operations Day Shift, dated October 21, 2003 33

Callaway Shift Assignments: Operations Night Shift, dated October 21, 2003 34

Callaway Reactor Operator Daily Log, dated October 20, 2003 35

Callaway Shift Supervisor Daily Log, dated October 20, 2003 36

Callaway Reactor Operator Daily Log, dated October 21, 2003 37

Callaway Shift Supervisor Daily Log, dated October 21, 2003 38

Letter from Licensee's Attorney to OI:RIV, Subject: Callaway Investigation/Employee Concerns Program, with attachment, dated April 22, 2008 39

DETAILS OF INVESTIGATION

Applicable Regulations

10 CFR 50.5: Deliberate Misconduct (2003 Edition)

10 CFR 50.36: Technical Specifications (2003 Edition)

Purpose of Investigation

This investigation was initiated by the Nuclear Regulatory Commission (NRC), Office of Investigations (OI), Region IV (RIV), on September 28, 2007, to determine if control room personnel at Callaway Plant (Callaway) willfully failed to document a temperature transient that occurred on October 21, 2003 [Allegation No. RIV-2007-A-0096] (Exhibit 1).

Background

On March 2, 2007, Michael S. PECK, Senior Resident Inspector, NRC:RIV, assigned to Callaway, received an allegation from (b)(7)c (b)(7)c reported Callaway control room personnel intentionally failed to log a temperature transient as required by Callaway procedures.

According to (b)(7)c on October 21, 2003, while shutting down to Mode 3, the Reactor Coolant System temperature dropped below the Minimum Temperature for Critical Operation. However, the temperature transient was not documented in a condition report (CR) until 38 days later when identified by a (b)(7)c In addition, the incident was not documented in the shift supervisor log as required by procedures.

(b)(7)c stated the operating crew waited 90 minutes to fully insert control rods following shutting down the reactor. He claimed the delay to insert the rods may have been intentional to avoid scrutiny of the crew's actions, since the crew was supposed to maintain Mode 2 in case the equipment necessitating the shutdown was repaired. (b)(7)c asserted not logging the incident and failing to write a CR were negligent omissions.

Coordination with NRC Staff

On March 19, 2007, and April 9, 2007, a RIV Allegation Review Board (ARB) met to discuss (b)(7)c concern. The ARB determined the NRC:RIV technical staff needed to review Callaway procedures to determine if failing to insert the control rods and the subsequent failure to document the issue were required in Callaway's Technical Procedures.

On June 18, 2007, the RIV ARB met to again discuss (b)(7)c concerns. The NRC:RIV technical staff disclosed there was no time requirement in Callaway's Technical Specifications for the insertion of the control rods. It was determined if a violation for failing to document the issue was identified, the issue would be re-ARBed.

On September 24 and 27, 2007, the issue was again discussed at a RIV ARB. It was determined that failing to document the October 21, 2003, issue was a violation of the licensee's procedures and the ARB requested OI:RIV to initiate an investigation to determine if licensee personnel willfully failed to document the temperature transient.

Agent's Analysis

This investigation was initiated to determine if control room personnel at Callaway willfully failed to document a temperature transient that occurred on October 21, 2003.

(b)(7)c reported that in February 2007 (b)(7)c to a special project which (b)(7)c to identify past reactor shutdowns at Callaway and then analyze the "...critical parameters..." of the power levels and temperature ranges during the period of the reactor shutdown (Exhibit 2, p. 19). (b)(7)c stated that (b)(7)c reactor shutdowns for the period October 2002 through February 2007 and discovered that control room personnel had failed to document a "temperature transient" event on October 21, 2003. (b)(7)c further advised that (b)(7)c disclosed a total of nine occurrences of reactor shutdowns at Callaway. (b)(7)c charted the reactor shutdown data for October 21, 2003, and found a temperature transient (Exhibit 3) and a 100 minute delay with insertion of the control rods (Exhibit 4) during the NN11 Outage. (b)(7)c did not understand why there was delay with inserting the controls rods and "... really found nothing in the logs that would justify that delay" (Exhibit 2, p. 34).

(b)(7)c later realized that although the "temperature transient" had not been documented on October 21, 2003, the event was documented 38 days later [November 28, 2003] on Corrective Action Report (CAR) (b)(7)c (Exhibit 5) (b)(7)c (b)(7)c CAR (b)(7)c was completed and closed on January 15, 2004, with the annotation that changes would be incorporated into the Plant Shutdown training modules for reactor operators at Callaway (Exhibit 6, p. 4).

(b)(7)c reported that "The reactor shutdown was ensured while the rods were withdrawn by use of the Xenon transient" (Exhibit 8, p. 2). (b)(7)c he believed the control room crew may have missed the fact that the plant was in a shutdown mode for a period of time and therefore failed to take corrective action and insert the control rods in a timely manner (Exhibits 7 and 8). (b)(7)c further stated he suspected (b)(7)c (b)(7)c recognized the transient event and deliberately delayed the insertion of the control rods (Exhibit 2, pp. 137-142).

(b)(7)c indicated that due to the control room crew's failure to control the "core reactivity" during the event on October 21, 2003, they caused potential violations of Callaway's procedures of the Corrective Action Program, APA-ZZ-00500 (Exhibit 9); the Operations Department Code of Conduct, OPD-ZZ-00001 (Exhibit 10); the Operations Surveillance Procedure, Shutdown Margin Calculation, OSP-SF-00001 (Exhibit 11); and the Operations Procedure Reactivity Management Program, APA-ZZ-01300 (Exhibit 12). A review of Callaway's Corrective Action Program Procedure APA-ZZ-00500 disclosed guidance in Section 3 under Responsibilities,

"3.1.1. Identify and Report Adverse Conditions..." and instructions to report the adverse condition as stated in Section "3.1.1.3 Promptly initiate a Callaway Action Request System (CARS) document" (Exhibit 9, p. 6).

(b)(7)c explained that while researching this transient event, he was informed by (b)(7)c that (b)(7)c did not want him (b)(7)c to document the October 21, 2003, transient on a CAR (Exhibit 2, p. 142). (b)(7)c stated that at that time in 2003 (b)(7)c (b)(7)c *(sic)* was consistently ranked the Number One (b)(7)c I think he ... felt it might hurt his standing in the eyes of his supervisors. And for that reason, he didn't want to draw attention to his crew's failures by documenting it in the Corrective Action program" (Exhibit 2, p. 85). Specifically (b)(7)c alleged that (b)(7)c "intentionally covered up a plant transient..." because he was "...worried it would make them look bad" and affect his performance rating (Exhibit 2, p. 201).

When interviewed (b)(7)c (Exhibit 13) testified that although he could not recall the date, he first became aware that a temperature transient had occurred on October 21, 2003, during a review of the plant computer parameters logs for examples for the operator training modules. (b)(7)c advised he subsequently notified (b)(7)c and recommended that he generate a CAR to document the transient; however, (b)(7)c disagreed and explained that they had recovered the transient and resumed operations (Exhibit 13, p. 13). (b)(7)c explained that although (b)(7)c felt a CAR was unwarranted to document the transient event, he (b)(7)c told him he had no objection to him generating a CAR. (b)(7)c stated, "I felt no hindrance or any implication from him that that would be a bad idea. He just didn't feel like it warranted a CAR" (Exhibit 13, p 15). (b)(7)c recalled that after he drafted the CAR, he submitted the CAR to (b)(7)c for his review and he (b)(7)c concurred.

In testimony provided by (b)(7)c he stated that the crew did not intentionally "...keep the reactor critical during the shutdown..." or hold "...the rods out to keep the reactor critical to start right back up or to stay online so it would be easier" (Exhibit 14, p. 51). (b)(7)c explained that on October 20, 2003, there was a significant event already in progress which contributed to the transient on October 21, 2003. (b)(7)c stated the event, which started on October 20, 2003, and progressed into the next day, October 21, 2003, had previously been documented on a CAR and, "If it was documented on a CAR that we thought was significant, we usually didn't ...write another CAR" (Exhibit 14, p. 29). (b)(7)c stated that in 2003 they would not have generated another CAR if one had been written the previous day; however, due to a "...culture change..." at Callaway "...We write a CAR for everything now" (Exhibit 14, p. 29). (b)(7)c further explained that reactor "...shutdowns are not unexpected" and "Shutdowns, when you have equipment failures - - in this case the NN11 failure - - ...the crew that day probably thought they were going to shut down...I don't think typically they consider that adverse as far as...the corrective action program" (Exhibit 14, p. 70). (b)(7)c reiterated, "There was no attempt to keep the reactor critical. We were shutting the unit down" (Exhibit 14, p. 55). (b)(7)c further stated, "...It wasn't an inadvertent shutdown; we knew we were shutting down; we were going into Mode 3" (Exhibit 14, p. 51).

Interviews of Callaway operations personnel, (b)(7)c (b)(7)c (Exhibit 15); (b)(7)c Exhibit 16);

[(b)(7)c] (Exhibit 17) [(b)(7)c] (Exhibit 18) [(b)(7)c] (Exhibit 19); [(b)(7)c] (Exhibit 20); [(b)(7)c] (Exhibit 21); [(b)(7)c] (Exhibit 22); and [(b)(7)c] (Exhibit 23), disclosed that since the event occurred almost 5 years ago, they had limited recall or no recollection of the temperature transient event that occurred on October 21, 2003. [(b)(7)c] testified they were in a reactor operator training status on October 21, 2003, and, as trainees, were not involved with responding to the transient event. [(b)(7)c] testified he was not present in the control room during the transient event or had no first-hand knowledge of the event. [(b)(7)c] stated that his only involvement with the transient event that occurred on October 21, 2003, was when he performed a technical review of the event in 2007 (Exhibit 15, p. 21). [(b)(7)c] had no recollection of the events on October 21, 2003, and stated that as a [(b)(7)c] at that time, "90 percent" of his work was outside of the control room (Exhibit 20, p. 9). [(b)(7)c] testified he had no recollection of a reactor shutdown or significant event that occurred on October 21, 2003. [(b)(7)c] further stated that as the [(b)(7)c] on that day [October 21, 2003], he was not assigned to control room watch duty (Exhibit 21, pp. 10-12). [(b)(7)c] testified that he was assigned as the [(b)(7)c]." in 2003. [(b)(7)c] remembered that the reactor shutdown on October 21, 2003, was due to "...a battery charger problem..." (Exhibit 16, p. 6). When questioned about the absence of log entries on the shift logs regarding the temperature transient on October 21, 2003 [(b)(7)c] stated, "...it could've been better log taking...But I don't think anything was not logged on purpose...it was extremely busy that day" (Exhibit 16, p. 27).

An examination of an email from [(b)(7)c] to [(b)(7)c] dated January 15, 2004, supported [(b)(7)c] testimony that [(b)(7)c] concurred with the information that he documented on [(b)(7)c]. The email also reflected that [(b)(7)c] had not pressured or influenced [(b)(7)c] not to report the transient event, but sought his [(b)(7)c] concurrence before closing the CAR (Exhibit 24).

A review of documents obtained from Callaway revealed that on October 20, 2003, [(b)(7)c] (Exhibit 25) was generated by [(b)(7)c] to document the NN11 inverter failure, and on October 22, 2003, CAR [(b)(7)c] (Exhibit 26) was generated by [(b)(7)c] to document the "Letdown isolation" that occurred on October 21, 2003. A review of Work Order No. [(b)(7)c] dated October 21, 2003, reflected problems with an inoperable valve (Exhibit 27).

In his interview [(b)(7)c] stated that "...it was suggested that this incident was not documented until 30 days later. The corrective action report says the discovery date or the actual event happened on October 20th of 2003" CAR [(b)(7)c] (Exhibit 23, p. 19). [(b)(7)c] further testified the CAR that he generated on October 22, 2003 CAR [(b)(7)c] "...was written to document the pressurizer level going below 17 percent and letdown isolating, which was the catalyst of the temperature transient" (Exhibit 23, p. 43). [(b)(7)c] explained that the CAR initiated 38 days later CAR [(b)(7)c] by [(b)(7)c] was a supplementary documentation of the temperature transient that occurred on October 21, 2003.

In an interview of [(b)(7)c] he stated that when he was contacted by [(b)(7)c] a month after the transient event, he [(b)(7)c] ...didn't try to discourage him from writing a CAR..." (Exhibit 22, p. 36). [(b)(7)c] testified, "My understanding was that he thought there were some lessons to be learned, and he was going to initiate a CAR" (Exhibit 22, p. 35). [(b)(7)c] further stated, "I don't think it's accurate to say we didn't initiate any corrective actions. There were two corrective actions we did initiate...it was a function of we were busy. And we followed up with a CAR the following day" (Exhibit 22, p. 42). [(b)(7)c] advised there were no purposeful delays or intentions not to document the event on October 21, 2003.

Additional documentation reviewed during this investigation included Callaway Off-Normal Operating Procedure, Loss of Safety Related Instrument Power, OTO-NN-00001 (Exhibit 28); Callaway Off-Normal Operating Procedure, Loss of Letdown, OTO-BG-00001 (Exhibit 29); Callaway Operations Department Procedure, Operations Department Narrative Logs, OPD-ZZ-00006 (Exhibit 30); Callaway Procedure Reactor Coolant System B342 Minimum Temperature for Criticality (Exhibit 31); Callaway Procedure Electrical Power Systems 3.8.7 Inverters Operating (Exhibit 32); Callaway Shift Assignments: Operations Day Shift, October 21, 2003 (Exhibit 33); Callaway Shift Assignments: Operations Night Shift, October 21, 2003 (Exhibit 34); Callaway Reactor Operator Daily Log, dated October 20, 2003 (Exhibit 35); Callaway Shift Supervisor Daily Log, dated October 20, 2003 (Exhibit 36); Callaway Reactor Operator Daily Log, dated October 21, 2003 (Exhibit 37); and Callaway Shift Supervisor Daily Log, dated October 21, 2003 (Exhibit 38).

In summary, this investigation found no evidence to support that the [(b)(7)c] willfully failed to document a temperature transient at Callaway on October 21, 2003, or that the crew members failed to initiate a CAR to document the transient event. This investigation established through testimony and a review of documents that [(b)(7)c] solicited [(b)(7)c] opinion regarding initiation of a CAR to document the temperature transient 38 days after the event and that [(b)(7)c] responded he had no objection to submission of the CAR into the corrective action program. This investigation also determined that contributing factors to the crew's failure to document the temperature transient were primarily the equipment failure of a moisture separator reheater drain valve on October 20, 2003, which subsequently created the condition that resulted in a temperature transient event. Although the CARS generated by the [(b)(7)c] on October 20, 2003, and October 22, 2003, documented the significant events that occurred on shift, the CARS did not capture specific details of the temperature transient. Further, the reporting requirements for significant events at Callaway were not as clearly defined in 2003 when compared to the reporting requirements established in later years.

Conclusion

Based on the evidence developed during the investigation, OI:RIV determined the allegation that control room personnel at Callaway willfully failed to document a temperature transient on October 21, 2003, was not substantiated.

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SUPPLEMENTAL INFORMATION

During this investigation, a copy of Callaway's investigation regarding the transient event that occurred on October 21, 2003, was obtained by OI:RIV and included supplemental information for review by RIV staff as deemed appropriate (Exhibit 39). The investigation was conducted by Callaway's Employee Concerns Program.

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LIST OF EXHIBITS

Exhibit No.	Description
1	Investigation Status Record, dated September 28, 2007 (1 page).
2	Transcript of Interview with (b)(7)c dated November 6, 2007 (222 pages).
3	CHART: NN11 Outage (MODE 2/turbine trip), dated October 21, 2003 (1 page).
4	CHART: NN11 Outage (100 minute delay), dated October 21, 2003 (1 page).
5	Callaway Action Request System, Action Request No (b)(7)c Discover Date November 28, 2003 (3 pages).
6	Cars Final Report, CAR No (b)(7)c Close Date January 15, 2004 (5 pages).
7	Email from (b)(7)c to OI:RIV, Subject: Callaway – Rods Withdrawn Investigation, dated November 6, 2007 (1 page).
8	Email from (b)(7)c to OI:RIV, Subject: Allegation RIV-2007-A-0096, Concern 1 with attachments, dated December 7, 2007 (12 pages).
9	Callaway Administrative Procedure, Corrective Action Program, APA-ZZ-00500, Revision 34, dated March 20, 2003 (98 pages).
10	Callaway Operations Department Procedure, Operations Department – Code of Conduct, OPD-ZZ-00001, Revision 016, dated September 10, 2003 (84 pages).
11	Callaway Operations Surveillance Procedure, Shutdown Margin Calculation, OSP-SF-00001, Revision 026, dated April 23, 2002 (31 pages).
12	Callaway Operations Procedure, Reactivity Management Program, APA-ZZ-01300, Revision 000, dated January 23, 2001 (31 pages).
13	Transcript of Interview with (b)(7)c dated March 31, 2008 (44 pages).
14	Transcript of Interview with (b)(7)c dated March 31, 2008 (77 pages).
15	Transcript of Interview with (b)(7)c dated March 31, 2008 (24 pages).

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16 Transcript of Interview with (b)(7)c dated March 31, 2008 (36 pages).

17 Transcript of Interview with (b)(7)c dated March 31, 2008 (12 pages).

18 Transcript of Interview with (b)(7)c dated March 31, 2008 (15 pages).

19 Transcript of Interview with (b)(7)c dated April 1, 2008 (14 pages).

20 Transcript of Interview with (b)(7)c dated April 1, 2008 (18 pages).

21 Transcript of Interview with (b)(7)c dated April 1, 2008 (14 pages).

22 Transcript of Interview with (b)(7)c dated April 1, 2008 (58 pages).

23 Transcript of Interview with (b)(7)c dated April 22, 2008 (57 pages).

24 Email from (b)(7)c to (b)(7)c Subject: RE: CARS (b)(7)c dated January 15, 2004 (1 page).

25 Callaway Action Request System, Action Request No (b)(7)c Discover Date October 20, 2003 (10 pages).

26 Cars & Action Full Detail, CAR No (b)(7)c Discovery Date October 22, 2003 (9 pages).

27 Work Order No (b)(7)c dated October 21, 2003 (4 pages).

28 Callaway Off-Normal Operating Procedure, Loss of Safety Related Instrument Power, OTO-NN-00001, Revision 006, dated October 9, 2002 (53 pages).

29 Callaway Off-Normal Operating Procedure, Loss of Letdown, OTO-BG-00001, Revision 4, dated October 23, 1995 (5 pages).

30 Callaway Operations Department Procedure, Operations Department Narrative Logs, OPD-ZZ-00006, Revision 008, dated October 27, 1999 (11 pages).

31 Callaway Procedure Reactor Coolant System, B342 Minimum Temperature for Criticality, undated (3 pages).

32 Callaway Procedure Electrical Power Systems, 3.8.7 Inverters - Operating, Amendment No. 133, undated (2 pages).

33 Callaway Shift Assignments: Operations Day Shift, dated October 21, 2003 (1 page).

34 Callaway Shift Assignments: Operations Night Shift, dated October 21, 2003 (1 page).

35 Callaway Reactor Operator Daily Log, dated October 20, 2003 (1 page).

36 Callaway Shift Supervisor Daily Log, dated October 20, 2003 (2 pages).

37 Callaway Reactor Operator Daily Log, dated October 21, 2003 (3 pages).

38 Callaway Shift Supervisor Daily Log, dated October 21, 2003 (3 pages).

39 Letter from Licensee's Attorney to OI:RIV, Subject: Callaway Investigation/Employee Concerns Program, with attachment, dated April 22, 2008 (16 pages).

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ATTACHMENT 9

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

RECEIVED
APR 28 2010
SENIOR VICE PRESIDENT & CNO

APR 20 2010

Mr. Adam C. Heflin, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: CLOSURE OF INVESTIGATION (OI 4-2007-049)

Dear Mr. Heflin:

This refers to an investigation conducted by the NRC's Office of Investigations regarding activities at the Callaway Plant. The Office of Investigations initiated the investigation to determine if control room personnel at the Callaway Plant willfully failed to document a temperature transient that occurred on October 21, 2003.

Based on the evidence developed during the investigation, the Office of Investigations determined the allegation that control room personnel at the Callaway Plant willfully failed to document a temperature transient on October 21, 2003, was not substantiated. The NRC plans no further action related to the willful aspects of the allegation and considers this investigation closed.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

William B. Jones, Chief
Allegations and Enforcement Branch

Docket: 50-483
License: NPF-30