BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a AmerenUE's Tariffs to Increase its Annual Revenues for Electric Service	)))	**Case No. ER-2008-0318**
In the Matter of Public Counsel's Petition to Open a Case to Investigate AmerenUE's Plan to Construct and Finance a Second Unit at the Callaway Nuclear Plant Site	))))	**Case No. EO-2009-0126**
In Re: Union Electric Company's 2008 Utility Resource Filing pursuant to 4 CSR 240 - Chapter 22.	)))	**Case No. EO-2007-0409**

NOTICE REGARDING EXTERNAL COMMUNICATIONS

Issue Date: January 30, 2009

On January 30, 2009, I received the attached electronic mail messages from Lawrence S. Criscione.

Dated at Jefferson City, Missouri,
on this 30th day of January, 2009.
Davis, Commissioner

Gregory, Sheryl

From: Lawrence Criscione [lscriscione@hotmail.com]
Sent: Thursday, January 29, 2009 9:48 PM
To: Jeanette Oxford; Will Kraus
Cc: Davis, Jeff; Jeanette Oxford; Casey Exendine; Gregory, Sheryl; Taylor, Michael; William Jones; Marty Gelfand; Houlihan Bill; Llona Weiss; Henderson, Wess
Subject: Minimal Staffing at Callaway
Attachments: Fire Brigade Staffing.doc

Representative Oxford and Kraus,

Please see the attached document concerning the Fire Brigade and Control Room Staffing at Callaway Plant. For twenty years, Ameren routinely understaffed the Fire Brigade by crediting the Outside Equipment Operator as a Fire Brigade member. After this practice was ended nearly four years ago, Callaway Plant still has not hired enough Equipment Operators to staff the Fire Brigade on all its crews without using substantial overtime (two or more overtime canvasses per back-shift, whereas the goal for most nuclear plants is no overtime for routine staffing of watches).

Although Callaway Plant is not violating any laws by heavily relying on overtime to staff its fire brigade, it should be noted that no laws were broken (at least no one was criminally prosecuted) when the Taum Sauk upper reservoir collapsed. However, with the hindsight gained from the Taum Sauk incident I do not believe anyone in state government will claim that Ameren's "legal" operation of Taum Sauk was acceptable. Taum Sauk was not a freak accident; it was the result of cutting corners - such as deferring repairs of faulty equipment, postponing necessary maintenance in favor of generation, relying on automation (with known damage and errors) without human back up. We should not wait for a nuclear Taum Sauk to occur before ensuring Ameren is properly operating Callaway Plant.

Larry

Lawrence S. Criscione
(573) 230-3959

From: lscriscione@hotmail.com
To: katz@kmblegal.com
Subject: CAR 200408626 and 200502693
Date: Thu, 27 Sep 2007 19:39:41 -0400

Debra,

There was a fire at Callaway Plant in September 2004. In November 2004 I attended Fire Brigade Training with the crew which fought that fire. There supervisors were not present at the training and I was the only salaried person from Operations in attendance.

The equipment operators expressed a concern that issue brought up during the Event Review Team meeting in September were being covered up by the company. The specific issue was using the Outside Operator for a Fire Brigade assignment. I informed the operators that my experience was the ERT minutes are typically a verbatim transcription of the meeting and I doubted that anything said at the meeting would not appear in the meeting minutes (I was wrong on this issue. ERT minutes are only sometimes verbatim transcriptions and are more often summaries). I took an

action from the training session to investigate the matter and if necessary to generate a Callaway Action Request (CAR) to address the operators concerns.

I was able to obtain the tape of the September ERT meeting from Susan Klang - she is a clerk in the Performance Improvement department and the wife of the Equipment Operator steward Rob Klang. I wrote CAR 200408626 to address the Equipment Operators concerns and attached a partial transcription of the ERT minutes to that CAR.

On November 18, 2004, while writing CAR 200408626 I was challenged by Pat McKenna (my boss's boss) as to why I was writing the CAR. I explained to him that I had an action from Fire Brigade training to document the Equipment Operator's concerns. He informed me the issue concerning use of the Outside Operator on the Fire Brigade had already been addressed and the union was using me to get more overtime money (not being allowed to credit the Outside Operator for Fire Brigade would result in some of the lighter staffed crews having to canvass overtime to properly staff the Fire Brigade).

I wrote and sent CAR 200408626 anyway. I believe this action irritated Pat McKenna. CAR 200408626 was screened on November 22, 2004. Pat McKenna requested the Lead and attempted to close it that day. It was answered that day except for one item which required information from the contractors who assist with Fire Brigade Training. When that action was answered in mid-December, CAR 200408626 was closed.

I believe that at least one Equipment Operator was following CAR 200408626 and may have discussed it with the Senior Resident Inspector when it was closed.

In early 2005, the US NRC Senior Resident Inspector at Callaway Plant (Michael Peck) took up the issue of the Outside Operator being credited for the Fire Brigade. That resulted in CAR 200501985 being written by George Belchik of Operations. I became aware of this issue when Dave Neterer sent an email to all the Operating Supervisors (I was on that distribution list at the time due to having a Senior Reactor Operators license) advising them the Outside Operator could no longer be credited for the Fire Brigade. Upon learning of this issue I wrote CAR 200502693 concerning how the issue was brought to the attention of Operations Management late in 2004 and could have been addressed in house, thus avoiding a NRC finding.

CAR 200502693 was discussed with Eric Olson (head of the Performance Improvement department), Jim Gloe (Eric's boss who was later terminated in late 2005), Keith Young (Jim's boss who died in 2006) and Chuck Naslund (Senior Vice President of Nuclear). No changes to the Corrective Action Process were made as a result of CAR 200502693 but some of the suggested changes were made late in 2005 due to industry benchmarking.

Lawrence S. Criscione
I do not have a home computer and do not regularly check this email account. If you send me something needing my attention, please call me at (573) 230-3959 and leave me a message to check my account. My primary email is through my employer.

Subject: RE: Allegation RIV-2007-A-0093
Date: Wed, 26 Sep 2007 08:09:36 -0400
From: katz@kmblegal.com
To: lscriscione@hotmail.com

Can you please forward copies of all correspondence you have had with the NRC about these safety issues, including the results of the investigations issued by the NRC?

[redacted]

Debra S. Katz
1718 Connecticut Ave., N.W.
Sixth Floor
Washington, D.C. 20009
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Staffing Concerns at Callaway Plant

On September 18, 2004 there was a small fire on the roof of the Communications Corridor at the Callaway Nuclear Plant, adjacent to the building which houses the reactor plant Control Room. The fire was extinguished by the Fire Brigade but then "re-flashed" over an hour later, requiring the Fire Brigade to be activated a second time to put out the fire.

An Event Review Team meeting was held on September 20, 2004 to analyze the Fire Brigade's response to the roof fire. At that meeting the Equipment Operators expressed concerns that the Fire Brigade was not adequately staffed. Their specific concern was with crediting the Outside Equipment Operator watch station as a Fire Brigade responder, as expressed by one of the Equipment Operators:

> *Before this fire I had no idea how limited our resources are. We got four people. This was a really tiny fire and we used up all kinds of* [oxygen] *bottles and air packs. Man, if we have any kind of fire out here at all we're going to need help. And I knew that before but it really drove the point home yesterday...*

Although the summary for the September 20, 2004 Event Review Team meeting thoroughly documented several process and equipment concerns, the concerns of the Equipment Operators, regarding the assignment of the Outside Equipment Operator watch station to the Fire Brigade, were not captured.

When the Callaway Nuelear Plant was licensed by the US Nuclear Regulatory Commission, Ameren committed to staffing the Fire Brigade such that "*at least five members shall be maintained onsite at all times.*" For twenty years, the company staffed the operating crews with watch standers who might not be "onsite" in the event of a fire.

On November 15, 2004 the Equipment Operators who fought the September 2004 roof fire expressed their concerns, to a Fire Brigade Leader, that the company was inadequately staffing the Fire Brigade and had intentionally omitted their concerns from the September 20th Event Review Team summary. The Fire Brigade Leader documented their concerns in the Callaway Action Request system as an Adverse Condition. Ignoring a request by the Fire Brigade Leader that he be assigned the task of resolving the Adverse Condition, the Assistant Operation Manager downgraded the concerns to a Business Tracking item and dismissed them with an argument that:

> *The Intake and other outlying buildings are part of Callaway. The FS* [Field Supervisor who also serves as the Fire Brigade Leader] *and Outside EO can be at any of these locations...*

Although the Intake structure is technically "onsite" since it is Ameren property, it was not the original intent of the US NRC to allow the Fire Brigade Leader to be 20 minutes away from the reactor plant. Also, applying Ameren's own literal interpretation of its

licensing requirements, since the Outside Equipment Operator is travelling on a county road to go between the Intake structure and the main plant, he is not "onsite" during this time period and the company is not meeting its commitment to have five Fire Brigade members "*maintained onsite at all times.*"

The Callaway Nuclear Plant is sited on a plateau, about five miles from the Missouri River, where the town of Reform, MO used to be located. Its cooling tower is supplied with water pumped from an Intake structure which is over 7½ miles from the plant, most of which is along a county gravel road. The image at right was captured from "Google Earth". The red dot east of balloon "B" is the approximate location of the fire brigade locker. The red dot south of balloon "A" is the location of the Intake structure on the Missouri River. The Outside Equipment Operator spends the majority of his 12-hour watch "outside" the security fence which surrounds the main area of the plant, and during his watch he makes at least one trip to the Intake structure which is more than a 20 minute drive from the main plant.

On Mareh 29, 2005 the US Nuclear Regulatory Commission's Resident Inspector at the Callaway Nuclear Plant timed an Ameren employee to determine how long it actually took to get from the Intake structure to the Fire Brigade locker. The trip was made in 21 minutes.

Even after receiving scrutiny from the Resident Inspector, Ameren continued to flaunt their licensing basis for another month. After being issued a finding in the US NRC's first quarter 2005 inspection report for not properly staffing the Fire Brigade, on April 28, 2005 the Operations Manager at the Callaway Nuelear Plant ordered the operating crews

to:

> *maintain four (4) Fire Brigade qualified Equipment Operators on each shift excluding the Primary EO and Outside EO.*

At the time of the policy change to no longer credit the Outside Equipment Operator as a Fire Brigade member, half of the operating crews did not have enough Equipment Operators to meet the Fire Brigade commitments without overtime support from Equipment Operators on other crews. Thirty months later, when the understaffing issue was brought to the attention of Senator Claire McCaskill, the Equipment Operator manning had only gotten worse with a total shortfall of nine Equipment Operators. Ameren's explanation to Senator McCaskill's staff was that since it is allowed to use overtime to cover the required short fall of Equipment Operators, no staffing increases are required.

Since 2007 the Fire Brigade and Main Control Room staffing levels at Callaway Plant have continued to degrade. In 2004 there were three licensed Senior Reactor Operators per crew. One SRO was the Shift Manager, one was the Control Room Supervisor and one was the Field Supervisor who also served as the Fire Brigade Leader. Currently at Callaway Plant, only two of the six operating crews have three Senior Reactor Operators. Although only two Senior Reactor Operators are required, it is standard practice at most single unit nuclear plants to have three SRO's on each shift.

Other staffing concerns exist at Callaway Plant. Since the Three Mile Island nuclear accident, the US NRC has required a degreed engineer to be present at all times to support the Control Room as the Shift Technical Advisor. The Shift Technical Advisor's role is to back up the decisions of the Control Room Supervisor and Shift Manager during a reactor accident. Currently at Callaway Plant, during the backshifts, the Shift Technical Advisor role is fulfilled by requiring that either the Shift Manager or Control Room Supervisor possess a Shift Technical Advisor qualification (have an engineering degree plus some additional training). Apparently, by possessing a Shift Technical Advisor qualification, these individuals are able to advise themselves and do not require the additional input of a third person. Although, amazingly, this practice is allowed by the US NRC, at most nuclear plants the Shift Technical Advisor is a separate (i.e. third) person from the two people he is advising.

Saving money by short staffing can have dangerous consequences. On December 13, 2005 Ameren overtopped the Taum Sauk upper reservoir in Reynolds County Missouri, flooding Johnson Shut-ins State Park and nearly killing the superintendent, his wife and three young children when their house was destroyed by a wall of water. Assigning a $10/hour night watchman to watch the filling evolution from the top of the upper reservoir could have prevented the entire accident. Instead, Ameren relied on instrumentation, which was known to be damaged but not repaired, to ensure the upper reservoir was never overtopped while filling it.

Since he had been told that his family would receive 12 minutes notice if there was ever a reservoir break, the Johnson Shutins superintendent was surprised to learn that there was never anyone assigned to watch the reservoir during filling evolution and that the whole process was controlled remotely, 100 miles away, from Bagnell Dam. After his home was destroyed by the rush of water, the superintendent's five-year-old son was found unconscious and not breathing, but was able to be revived by the emergency responders. Had the incident occurred on a typical early morning in July, vice December, it is likely that hundreds of campers would have died as the wall of water ripped through the very popular Johnson Shut-ins campground on its way to the lower reservoir.

The Callaway Nuclear Plant generates more than $50,000 worth of electricity every hour; Ameren can afford to properly staff its reactor plant Control Room as well as other facilities it operates.

Gregory, Sheryl

From: Lawrence Criscione [lscriscione@hotmail.com]
Sent: Thursday, January 29, 2009 9:48 PM
To: Jeanette Oxford; Will Kraus
Cc: Davis, Jeff; Jeanette Oxford; Casey Exendine; Gregory, Sheryl; Taylor, Michael; William Jones; Marty Gelfand; Houlihan Bill; Llona Weiss; Henderson, Wess
Subject: Supporting Documentation Concerning Fire Brigade Staffing
Attachments: CAR_200408626.pdf; CAR_200501985.pdf; CAR_200502693.pdf

Representatives Oxford and Kraus,

Attached to this email are some of the supporting documentation concerning the understaffing of the Fire Brigade at Callaway Plant. Like the acid issue, the understaffing of the Fire Brigade had been brought up multiple times before, at the request of the Equipment Operators, I attempted to address it. And like the acid issue, my career was damaged for taking on the issue.

The email below was sent by me to the Operations members of the Callaway Action Request Screening Committee. In the email I am requesting to be assigned as the Lead Responder to the Callaway Action Request which I wrote to address the concerns of the Equipment Operators who fought the Communications Cooridor roof fire in September 2004. Operations refused to assign this CAR to me because Pat McKenna did not want me to answer it - he wanted to answer it himself to ensure the Response allowed Operations to continue to credit the Outside Equipment Operator as a Fire Brigade member.

Larry

Lawrence S. Criscione
(573) 230-3959

From: Criscione, Larry S.
Sent: Friday, November 19, 2004 12:27 PM
To: Belchik, George N.; Dampf, John F.; Davis, R. (john) J.
Cc: Mckenna, Patrick J.; Barton, Robert G.; Bruckerhoff, Kevin J.; Simmons, Bland B.; Ramatowski, Thomas E.; Rauch, Gerald P.
Subject: CARS 200408626

Assign CARS 200408626 to me. I have reviewed APA-ZZ-00743 and not all items in the CARS are answered. Although this is Kevin's procedures, Operations must provide the input. I will assign actions as necessary to evaluate policy and revise the procedure.
After talking to several SROs I received different answers to some of the questions posed in the CARS. It is worth the effort to ensure we all have the same answer.

Larry

Callaway Action Request System

Action Request

Cars Number	Cars Type	Status	Discover Date	Due Date
200408626	Business Tracking	Closed	11/18/2004	12/22/2004
Originator	Department	Phone		
Crisclone, Lawrence (14827)	O	66113		
Lead	Department	Phone		
Mckenna, Patrick (3879)	O	68504		

Summary Description

Evaluate the Roles of Outside Operator and PEO in Fire Brigade

Description

CARS 200407284, Small Fire on the Comm. Corridor Roof above Elevator Machine Room, and CARS 200407480, Evaluate fire brigade response to Communications Corridor Roof Fire, document the response of the Fire Brigade to the fire and reflash on 9/18/04. Final Minutes Summaries for the two ERT meetings are attached to CARS 200407284.

Crew 1 (the on shift crew which responded to the 9/18/04 fire) attended Fire Brigade training on November 16, 2004. Concern was expressed regarding the assignment of the Outside Operator to the Fire Brigade. This issue arose during the second ERT (involving the crew's response to the fire and reflash) but was not addressed in the "ERT Summary 200407284 second meeting" document which was attached to the CARS and distributed to the Equipment Operators. A partial transcript of the ERT is attached to this CARS containing a short discussion regarding use of the Outside Operator on the Fire Brigade. Although the issue arose at the ERT, it was not significant to the event since the Outside Operator was NOT on the Fire Brigade because an extra-EO (canvassed to support switching evolutions) was available for Fire Brigade assignment. Failure to include the discussion in the final summary of the meeting minutes has left the impression on the Equipment Operators that discussion of the issue is being avoided, since it would possibly result in the commitment to always man the crews with at least six Equipment Operators.

An additional concern also arose. It was disseminated at the Fire Brigade training that the Primary Equipment Operator may stand in for the Outside Operator until he arrives.

The status of the Primary Equipment Operator and Outside Operator with regard to being on the Fire Brigade was discussed for approximately ten minutes. Many good questions were asked; none were resolved. The originator of this CARS accepted action at Fire Brigade training to write a CARS to address the issues discussed (this is that CARS).

FSAR 9.5.1.8 was referenced after training, and it contains the following statement:

> A site Fire Brigade of at least five members shall be maintained onsite at all times. There may be less than five members for a period of time not to exceed two hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions. The Fire Brigade shall not include the Shift Supervisor and the other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency. Qualified personnel are assigned in accordance with established procedures to the fire brigade by the Operating Supervisor at the beginning of each shift.

Operations should evaluate the following questions which arose during training and ensure the Equipment Operators are aware of the final decisions either through feedback at Fire Brigade training or crew briefs. The response to these questions should be provided in the Lead Response to this CARS or (preferably) addressed in APA-ZZ-00743 where appropriate:

1. Why were the Fire Marshall, Fire and Rescue Training Inc. instructors, Fire Protection Engineer Design and Fire Protection Engineer Systems not invited to the second ERT?

   Additional information: the Fire Marshall and Fire and Rescue Training Inc. instructors were possibly at Page Fire School the day of the ERT. It is not known what the engineers' schedules were.

2. Do the licensing documents allow the Outside Operator to be a Fire Brigade member?

   FSAR 9.5.1.8 states "at least five members shall be maintained onsite at all times." Is there a definition for "onsite"? Does it include the Intake and other outlying areas?

   Is it acceptable for the Field Supervisor and Outside Operator to be at the Intake administering TPE with only three EOs (excluding the PEO) remaining inside the protected area?

   FSAR 9.5.1.8 states "There may be less than five members for a period of time not to exceed two hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positons."

   When a Fire Brigade member, should the Outside Operator only respond to unexpected occurrances at the Intake and other outlying areas? Should normal rounds not be performed (there are commitments in the Intake rounds)?
3. Is it too much to assume a design basis accident and a fire?

   Additional information: CARS 200301765 states "There is not any requirement to analyze for multiple design basis accidents at the same time." No reference is provided, but this is often mentioned in LOCT and ILT.
4. Can a third RO act as the Safe Shutdown Operator?

   Does the Safe Shutdown Operator need to be proficient as Primary Equipment Operators?

   SROs are tested on the PEO's attachment of OTO-ZZ-00001 during ILT JPMs. Are ROs tested on this attachment during LOCT JPMs? Does being trained and tested on this attachment during LOCT qualify an individual to be the Safe Shutdown Operator?
5. Can the Primary Equipment Operator dress out with the Fire Brigade and be on the Backup Hose Team while awaiting for the Outside Operator to respond?

   Additional Information: CARS 199500001 states "the Primary EO should not be assigned Fire Brigade duties."

   FSAR 9.5.1.8 states: "The Fire Brigade shall not include the Shift Supervisor and the other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency. Qualified personnel are assigned in accordance with establish procedures to the fire brigade by the Operating Supervisor at the beginning of each shift."

   Does "shall not include" merely mean shall not be "assigned...to the fire brigade by the Operating Supervisor at the beginning of each shift" or does it also mean a designated safe shutdown operator may not dress out and be part of a hose team while awaiting relief from the Outside Operator?

   Can the CRS (who has an attachment assigned in OTO-ZZ-00001) lead the Fire Brigade while awaiting for the FS to return from outside the Protected Area? Should the SEO (Assistant Bridage Leader) be assigned to the Backup Hose Team (vice the Attack Team) while awaiting the return of the Fire Brigade Leader?
6. Can the Field Supervisor or a Fire Brigade assigned EO skip counting out of the RCA during a Fire?

   Additional Information: CARS 200301203 provides guidance for exiting the RCA during a fire.

   Does the guidance provided in CARS 200301203 apply to other Operations personnel who, although were not assigned to the Fire Brigade at the beginning of shift, would be expected to report to the Main Control Room or assist the Fire Brigade in dressing out or staging equipment (i.e. PEO, extra EOs, CRS, SS)?

Request this CARS be screened as an Adverse Condition based on the following:

- Current verbal guidance regarding the use of the Primary Equipment Operator to be a member of the Fire Brigade while awaiting the arrival of the Outside Operator appears to violate FSAR 9.5.1.8.
- A need for the company to address concerns from the work force that use of the Outside Equipment Operator on the Fire Brigade violates the "five members shall be maintained onsite at all times" requirement of FSAR 9.5.1.8.

Immediate Actions

Lead Response

Responses to questions.

1

2 Yes. The Intake and other outlying buildings are part of Callaway. The FS and Outside EO can be at any of these locations doing normal rounds or TPE. PJM 11/22/04

3 There are no requirements to analyze for multiple design basis accidents at the same time. Each design basis accident has specific criteria that are required for the analysis. PJM 11/22/04

4 Yes an RO or SRO can perform the duties for those watchstations for which they can supervise without any need to be proficient as a Primary Equipment Operator. PJM 11/22/04

5 The Primary EO can be assigned tasks to perform which may include dressing out as a hose team member. The Primary EO is not assigned Fire Brigade duty for the shift. Operations management should evaluate any event and the manpower available to determine which individual should perform which tasks. PJM 11/22/04

6 No CAR 200301203 addresses this situation for all of Operations emergency response personnel. PJM 11/22/04

1 See response in action. All questions answered. PJM 12/16/04

Keywords

Keyword	*Description*
FIRE	FIRE - Burning / Inflame / Actual fire events
FIRE BRIGADE	FIRE BRIGADE - Temporary fire fighting organization
FIRE PROTECTION	FIRE PROTECTION - Barrier, Detection & Suppression Systems

History

Type	*Description*	*User Pin*
H	Car Status changed from Initiate to Screening by Criscione, Lawrence (14827) on Nov 19 2004 12:14PM	14827
H	Car Type changed from Adverse Condition to Action Notice by Klang, Susan (3230) on Nov 22 2004 10:06AM	3230
H	Car Lead changed from to Mckenna, Patrick (3879) by Klang, Susan (3230) on Nov 22 2004 10:06AM	3230
H	Car Status changed from Screening to Evaluate by Klang, Susan (3230) on Nov 22 2004 10:06AM	3230
H	Initial Action Release by Mckenna, Patrick (3879) on Nov 22 2004 5:20PM	3879
H	Car Status changed from Evaluate to InProcess by Mckenna, Patrick (3879) on Dec 16 2004 1:04PM	3879
H	Car Status changed from InProcess to Closed by Mckenna, Patrick (3879) on Dec 16 2004 1:04PM	3879

Actions

1 - Mckenna, Patrick (3879) - O - 90 - - 12/22/2004 - Communications Corridor Roof fire EAT resolution

Callaway Action Request System

Action Request

Cars Number	Cars Type	Status	Discover Date	Due Date
200501985	Adverse Condition	Closed	3/30/2005	1/15/2006
Originator	**Department**	**Phone**		
Belchik, George (433)	O	68205		
Lead	**Department**	**Phone**		
Belchik, George (433)	O	68205		

SS Notified	NMR	ASME	NOW	Safeguards	Per Safety	Ec
False	False	False	False	False	False	Fa

Summary Description

Concern with Outside Equipment Operator on Fire Brigade

Description

A concern has been raised with the Outside Equipment Operator (O/O) being a member of the Fire Brigade. The primary issue is that the O/O is outside the protected area for a majority of his shift. The time spent outside the protected are includes time spent at the Intake Structure. The Intake Structure is approximately 8 miles via the heavy haul road from the MAF. It takes approximately 20 minutes to traverse from the Intake Structure to the Fire Brigade dress out area on 2061 elevation of the Communications Corridor. A trial run was performed to verify this travel time on 3-29-05. It took about 21 minutes to travel from the back deck of the Intake Structure to the Fire Brigade dress out area.

A review of the FSAR and the Fire Protection Program did not identify any time requirements for the Fire Brigade members. Also, there were no requirements identified in these documents that the Fire Brigade members must remain within the protected area specified in the FSAR.

FSAR 16.12.1b requires that "A site Fire Brigade of at least five members...shall be maintained onsite at all times..."

Does having the O/O as a member of the Fire Brigade meet the requirements of the FSAR?

Immediate Actions

Lead Response

Remedial Actions

Until this issue is resolved, Operations will maintain four (4) Fire Brigade qualified Equipment Operators (EO) on each shift excluding the Primary EO and Outside EO. Additionally, all Fire Brigade

Members need to remain within the Owner Controlled Area surrounding the main plant site.

This requirement was distributed to all the Operating Supervisors via an e-mail from the Superintendent, Operations.

Apparent Cause
There are conflicting interpretations of what constitutes the "site".

Corrective Action
Operations will maintain four (4) Fire Brigade personnel and one primary Safe Shutdown Operator on each shift. The Outside Equipment Operator will not be assigned Fire Brigade duties.

Closure
Corrective Action has been implemented.

Screening Worksheet

Performance Code	*Significance*	***Committee:***	*ORC*	*SAFE*	*PARC*	*CARB*	*MREP*
OI	3		False	False	False	False	False

Evaluations:	*MER*	*MCR*	*9MR*	***Closures:***	*Noted*	*Admin Close*
					False	False

Dispositions:	*MR*	*MSPI*	*MRA1*	*Repo*	*Trans*	*NMR*	*Oper*	*ASME*	*OOTR*	*PHPE*	*EPE*	*CCE*	*RWRK*	*PROC*
	False	False	False	False	False	False	False	False	False					

Keywords

Keyword	*Description*
APPENDIX R	Appendix R
FIRE BRIGADE	FIRE BRIGADE - Temporary fire fighting organization
FSAR	FSAR - Final Safety Analysis Report
RF14 RVWD	GL9118 / MODE RESTRAINT REVIEWED - CAP RESTRICTED USE

Trend Codes

Trend Type	*Trend Code*	*Description*
Event Type	LICINTR	AGENCY INTERFACE CONCERN
Activity	LIC	LICENSING REQUIREMENTS
Cause	MNS	NOT STRICT ENOUGH

History

Type	*Description*	*User Pin*
H	Car Status changed from Initiate to Screening by Belchik, George (433) on Apr 1 2005 5:55AM	433
H	Car Status changed from Screening to Evaluate by Haintel, Teresa (9862) on Apr 1 2005 9:51AM	9862
H	Car Lead changed from to Belchik, George (433) by Haintel, Teresa (9862) on Apr 1 2005 9:51AM	9862
H	Car Due Date changed from May 1 2005 12:00AM to Jun 2 2005 12:00AM by Belchik, George (433) on May 3 2005 8:33AM	433
H	Car Status changed from Evaluate to InProcess by Belchik, George (433) on Jun 1 2005 4:15PM	433
H	Car Due Date changed from Jun 2 2005 12:00AM to Aug 2 2005 12:00AM by Belchik, George	433

	(433) on Jun 1 2005 4:15PM	
H	Car Due Date changed from Aug 2 2005 12:00AM to Sep 1 2005 12:00AM by Belchik, George (433) on Aug 2 2005 6:17AM	433
H	Car Due Date changed from Sep 1 2005 12:00AM to Dec 2 2005 12:00AM by Belchik, George (433) on Aug 31 2005 7:03AM	433
H	Car Due Date changed from Dec 2 2005 12:00AM to Jan 15 2006 12:00AM by Belchik, George (433) on Dec 1 2005 7:17AM	433
H	Car Status changed from InProcess to Closed by Belchik, George (433) on Dec 7 2005 3:37PM	433

Actions

1 - Belchik, George (433) - O - 90 - - 1/15/2006 - Document Extension History

Callaway Action Request System

Action Request

Cars Number	Cars Type	Status	Discover Date	Due Date
200502693	Business Tracking	Closed	4/29/2005	8/31/2005
Originator	Department	Phone		
Criscione, Lawrence (14827)	O	66113		
Lead	Department	Phone		
Olson, Eric (4317)	PXI	68280		

Summary Description

Regulatory Issues Brought Up by the Craft Not Appropriately Addressed

Description

On September 18, 2004 the Callaway Plant Fire Brigade was called out to respond to a small fire on the Communication Corridor Roof. CARS 200407284 was initiated to document this event. On September 28, 2004 CARS 200407480 was initiated to "Evaluate fire brigade response to Communications Corridor Roof Fire."

On September 22, 2004 a "second" ERT meeting was held. During this meeting a concern was raised by an Equipment Operator regarding the use of the Outside Operator on the Fire Brigade. This concern was not included in the "Second Event Review Team Meeting Summary" attached to CARS 200407284 and was not addressed in CARS 200407284 or CARS 200407480. A partial transcript of the ERT discussion was attached to CARS 200408626 and is also attached to this CARS.

Note that the ability of the Outside Operator to respond to a fire was NOT an issue for the Sept. 18 fire:

- Due to the presence of an extra-EO the Outside Operator was not assigned to the Fire Brigade on Sept. 18
- The Outside Operator was at the Main Access Facility, entering the Protected Area, when the Fire Brigade was called out and responded to the call out as an extra

On November 15, 2004 the equipment operators assigned to the Fire Brigade on the Sept. 18 day shift attended Fire Brigade training. Part of the agenda for training that day was to discuss the Sept. 18 fire and response. The equipment operators expressed many concerns at the training meeting and the only operations management person present agreed to capture their concerns in a CARS. That CARS is 200408626.

At the Nov. 15 Fire Brigade meeting several equipment operators expressed the concern that the company is avoiding the topic of using the Outside Equipment Operator on the Fire Brigade.

On November 18, 2004, CARS 200408626 was written to capture the concerns of the EOs present at the Nov. 15 training. The initiator of CARS 200408626 requested his CARS be screened as an Adverse Condition based on the following:

- Current verbal guidance regarding the use of the Primary Equipment Operator to be a member of the Fire Brigade while awaiting the arrival of the Outside Operator appears to violate FSAR 9.5.1.8.
- A need for the company to address concerns from the work force that use of the Outside Equipment Operator on the Fire Brigade violates the "five members shall be maintained onsite at all times" requirement of FSAR 9.5.1.8.

On November 22, 2004, CARS 200408626 was screened as an Action Notice with the following Screening Comments:

> Request for evaluation. Note: Primary Equipment Operators are not assigned to fire brigade.

On November 22, 2004 in the Lead Response to CARS 200408626 it was re-affirmed that "the Intake and other outlying buildings are part of Callaway" with the implication that if Fire Brigade members are at or in route to/from these locations they meet the "onsite" requirement of FSAR 9.5.1.8.

On March 30, 2005 CARS 200501985 was written to address the question:

Does having the O/O as a member of the Fire Brigade meet the requirements of the FSAR?

On April 1, 2005 CARS 200501985 was screened as an Adverse Condition despite the fact that like CARS 200408626 it was a "Request for evaluation". One could argue the reason the two CARS were screened differently is the Action Notice was a "Request for evaluation" arising from craft concerns whereas the Adverse Condition was a "Request for evaluation" of the same issue except arising from concerns expressed by the NRC resident inspector.

Note the following:

- Many of the concerns raised in CARS 200408626 were addressed in earlier CARS, three of which are referred to in the numbered items which the CARS requests be addressed.
- To Operations, many of the issues were old issues which had already been resolved.
- Regulatory prerogatives change with time and old resolutions do not always meet current standards.
- It is not known if the concerns expressed by the equipment operators went beyond Operations for consideration.
- One could argue a "World Class Organization" would have addressed some of the EOs' concerns with CARS actions to Licensing and Emergency Preparedness to obtain and document their input.

Clinton Power Station was an INPO 3 plant in 2001 on its way to INPO 2 after a decades long decline which included a nearly three year shutdown for regulatory issues. The tool used by the Plant Manager to improve CPS' performance was the Corrective Action Program. Here are some key aspects of their process which are different from ours:

1. The initiator of a condition report was required to find a Lead. If the initiator could not find a Lead who would accept the CR, the initiator's supervisor was given the Lead. On back shift, if a department supervisor was not present the Shift Manager was given the Lead.
2. The Lead response was required within 48 hours of initiation.
3. The CAPCO meeting (analogous to our Screening Committee) met every weekday in the morning to review CRs. The CAPCO meeting reviewed CRs that were more than 48 hours old (by Monday this could include CRs written as late as the previous Thursday). By the time of the CAPCO review, a Lead Response was already present and actions were already assigned. The Department Corrective Action Representatives took unresolved issues back to their managers.
4. Every weekday afternoon the Management Review Committee met to review exceptions to the earlier CAPCO meeting. Managers brought up their exceptions and if an agreement could not be attained, the Plant Manager resolved the issue. All employees were invited to the MRC and if any employee had a concern about the disposition of a condition report, he could show up at the MRC and be assured that plant management was aware of his concern.
5. Individuals assigned actions in the corrective action process knew that their action and due date had been approved by either their manager (implicitly by not raising an exception at the MRC) or by the Plant Manager (explicitly through resolution at the MRC).
6. Each department was allotted a slight percentage of due dates which it could extend each month.

Note the following concerning the above process:

- By reviewing condition reports after actions were assigned and the Lead Response was provided, the corrective action process was focused on the cause (Lead Response) and resolution (Actions) and not just on the symptom (Description).
- The corrective action process had an aspect of Total Quality Management to it in that one role of condition reports was to serve as a way for workers to express their concerns and suggestions for improvements to the managers
- Diligent review and feedback of the CAPCO decisions by the Plant Manager over time refined their ability to produce a product which had few exceptions when reviewed at the MRC.
- The site as a whole had input into the resolution of condition reports. Items which required input from more than one department were unlikely to be resolved without that input.
- A forum was available for any employee to contest the resolution of a condition report in front of the plant management. If an employee was not satisfied with the resolution and later brought the issue up with an outside regulator, plant management was already aware of the concern and comfortable with their response.

The originator of this CARS requests the following:

- CARS 200408626 be re-opened and the six numbered items be addressed by Licensing, EP and RP as well as

Operations.
- Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to ensure concerns arising from the craft are addressed prior to becoming the concerns of outside regulators.
- Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to focus the process on the timely determination of the cause of problems and their resolution.

Immediate Actions

Lead Response

Extended to allow originator to view and comment. ECO

The following are responses to the originators request:

1. CARS 200408626 be re-opened and the six numbered items be addressed by Licensing, EP and RP as well as Operations.
It is recommended the originator discuss the answers and basis for the response with the Lead to CARS 200408626. The Lead and originator can get the requested departments involved as necessary in the discussion for further understanding of the issues as necessary.

2. Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to ensure concerns arising from the craft are addressed prior to becoming the concerns of outside regulators. **(See Below)**

   Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to focus the process on the timely determination of the cause of problems and their resolution. **(See Below).**

Several changes have been made in the Corrective Action Program (CAP) since January 2005. CARS 200500329 captures some of these changes for further information.

The following are statements suggested from the originator that was seen at Clinton Plant in the CARS followed by Callaway Corrective Action Plan responses and actions.

1. **The initiator of a condition report was required to find a Lead. If the initiator could not find a Lead who would accept the CR, the initiator's supervisor was given the Lead. On back shift, if a department supervisor was not present the Shift Manager was given the Lead.**

   Callaway Response: Our Corrective Action program, encourages everyone to write a CAR if they have a concern or idea. We have a procedural process to manage this concern or idea from initiation to closure. If the person writing the CAR were required to find a Lead, it could deter them from initating their concern (e.g., not knowing the procedural process, who should address the issue, or not feeling comfortable assigning work if they are not a supervisor, etc.). Our CARs are reviewed and dispositioned every workday at 0900. The CARs in Screening status are reviewed by Control Room personnel every work night and through the weekend to ensure there are no immediate issues which need to be addressed. This process is timely and efficient. No further action.

2. **The Lead response was required within 48 hours of initiation.**

   Callaway response: The Control Room and other designated personnel have the ability to assign Operability or NOW actions at any time throughout the night or day and allows the CAR to stay in the Screening status. NOW actions require 24 hour evaluation. ERT actions are assigned as necessary with the appropriate due date. Our Screening process dispositions due dates, as applicable. If there are immediate issues, a response can be required within 24 hours. Other issues can be assigned dates as needed. A normal evaluation is allowed 30 days, which is an average of the industry standard (from information taken from Corrective Action Program Owners Group (CAPOG). We are continuing to watch industry standards and will make adjustments as deemed necessary. These standards apply only to adverse conditions. No further action.

3. **The CAPCO meeting (analogous to our Screening Committee) met every weekday in the morning to review CRs. The CAPCO meeting reviewed CRs that were more than 48 hours old (by Monday this could include CRs written as late as the previous Thursday). By the time of the CAPCO review, a Lead Response was already present and actions were already assigned. The Department Corrective Action Representatives took unresolved issues back to their managers.**

   Callaway response: Our process is not to assign CAR Leads until after Screening, therefore there is no response in the Daily Leadership Meeting (with the exception of remedial actions). All CARs are now reviewed at the morning Daily Leadership Focus Meeting, which is each workday. This is an efficient process. No further action.

4. **Every weekday afternoon the Management Review Committee met to review exceptions to the earlier CAPCO meeting. Managers brought up their exceptions and if an agreement could not be attained, the Plant Manager resolved the issue. All employees were invited to the MRC and if any employee had a concern about the disposition of a condition report, he could show up at the MRC and be assured that plant management was aware of his concern.**

   Callaway response: As stated above, all CARs are now reviewed at the 11:00 Daily Leadership Focus Meeting. In addition, a Manager periodically attends Screening Committee meetings. Our process is not to assign CAR Leads until Screening, therefore there is no Lead response for the Daily Leadership Meeting (with the exception of remedial actions). If an employee disagrees with a disposition, our procedure directs them to work with the appropriate Lead or Supervisor before closure of the CAR. No further action.

5. **Individuals assigned actions in the corrective action process knew that their action and due date had been approved by either their manager (implicitly by not raising an exception at the MRC) or by the Plant Manager (explicitly through resolution at the MRC).**

   Callaway response: As stated above, CARs are reviewed in Leadership Meetings and CARB. Our process also enables Performance Review Groups (PRG) to review CARs and ensure actions and due dates are being managed appropriately. No further action.

6. **Each department was allotted a slight percentage of due dates which it could extend each month.**

   Callaway response: Each department manages their workload per the direction of the department head or manager. Our CARs software will allow extensions, however it forces a justification to ensure there are not personnel, plant or radiological concerns. CARB is now reviewing Sig 3 CARS in evaluate over 30 days, OE CARS in evaluate over 60 days, self- assessment CARS in evaluate over 60 days, Sig 1 & 2 CARS in-process over 150 days, and Sig 3 CARS in-process over 150 days. In addition, the Corrective Action Group is checking a sample of closed Sig 1, 2, 3, CARs each week to ensure all actions have been addressed. No further action.

7. Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to ensure concerns arising from the craft are addressed prior to becoming the concerns of outside regulators.

Callaway response:Our APA-ZZ-00500 Screening matrix was developed in accordance with industry standards as defined by CAPOG. The matrix defines adverse conditions, conditions adverse to quality, significant adverse conditions, and significant conditions adverse to quality. APA-ZZ-0500A, defines action notices and safety suggestions from the craft. With the information we are given, we are making every effort to be consistent and screen the CARs as appropriate. Any employee is welecome to attend Screening and give information to help with the disposition of the CAR. If an employee disagrees with the decision of the Screening Committee after it has been disposition, there are options to discuss with the appropriate level of management or bring the concern back to the Screening Committee for further evaluation. No further action to APA-ZZ-00500 or APA-ZZ-0500A is needed as this time.

8. Performance Improvement document in the response to this CARS what (if any) changes should be made to our Corrective Action Process to focus the process on the timely determination of the cause of problems and their resolution.

Callaway response: As stated above, CARB is now reviewing the timeliness of CAR resolution. Significant progress has been made over the past four months with this new process. See CAP PIs on Performance Mgmt web page In addition PRGs are also reviewing the status of CARs assigned to their department. No further action.

Keywords

Keyword	*Description*
CARS	CARS - Callaway Action Request System
CORRECTIVE ACT	CORRECTIVE ACT - Action taken to alleviate the symptoms of a problem
EMPLOYEECONCERN	EMPLOYEECONCERN - Employee Concern
ERT	ERT - Event Review Team
FIRE BRIGADE	FIRE BRIGADE - Temporary fire fighting organization
FSAR	FSAR - Final Safety Analysis Report
NRC	NRC - Nuclear Regulatory Commission

History

Type	*Description*	*User Pin*
H	Car Status changed from Initiate to Screening by Criscione, Lawrence (14827) on Apr 29 2005 11:18AM	14827
H	Car Type changed from Adverse Condition to Action Notice by Klang, Susan (3230) on May 2 2005 9:55AM	3230
H	Car Lead changed from to Olson, Eric (4317) by Klang, Susan (3230) on May 2 2005 9:55AM	3230
H	Car Status changed from Screening to Evaluate by Klang, Susan (3230) on May 2 2005 9:55AM	3230
H	Car Due Date changed from Jun 1 2005 12:00AM to Jul 15 2005 12:00AM by Olson, Eric (4317) on Jun 3 2005 1:31PM	4317
H	Car Due Date changed from Jul 15 2005 12:00AM to Aug 31 2005 12:00AM by Olson, Eric (4317) on Aug 10 2005 7:00AM	4317
H	Car Status changed from Evaluate to InProcess by Olson, Eric (4317) on Aug 19 2005 12:54PM	4317
H	Car Status changed from InProcess to Closed by Olson, Eric (4317) on Aug 26 2005 11:31AM	4317

Gregory, Sheryl

From: Lawrence Criscione [lscriscione@hotmail.com]
Sent: Thursday, January 29, 2009 11:29 PM
To: Will Kraus; Jeanette Oxford
Cc: Davis, Jeff; Jeanette Oxford; Casey Exendine; Gregory, Sheryl; Taylor, Michael; William Jones; Marty Gelfand; Houlihan Bill; Llona Weiss; Henderson, Wess
Subject: Importance of Stewardship and Responsibility
Attachments: MSHP interview of Toops.PDF

Representative Kraus and Oxford,

Attached to this email are the notes which Missouri State Highway Patrol Sergeant Wiedemann took when he interviewed Jerry and Lisa Toops following the Taum Sauk disaster.

I am sure you are aware that Jerry Toops was the superintendent of Johnson Shut-Ins State Park when the upper reservoir at Taum Sauk was over-topped and subsequently failed.

The three page interview summary is pretty intense. Imagine you were Lisa Toops when, on a cold December morning, you heard the deafening noise of the wall of trees and water as your house began to fill with water and break apart. Imagine hearing your five year-old son calling for you as he attempts to swim in the frigid water and you can do nothing to help him because you are fighting to swim yourself while keeping your 7 month-old son's head above water. You have no idea where your three-year-old daughter is. Imagine spending the weeks before Christmas praying that your three children, in the intensive care unit of the hospital, survive.

As tragic as the Toops' ordeal was, anyone who has visited Johnson Shut-ins State Park in July knows how lucky we were that the accident happened in December, when just the Toops were in the path of the water. It is not an exageration to state that there would have been hundreds of dead campers floating in the lower reservoir had the disaster occurred in the early hours of July vice December.

The wall of water which destroyed the Toops home was just a fraction of the roughly 3000 MW-hr of energy released down the mountainside in the torrent of water. The reactor core at Callaway Plant has more than 12,000 times as much energy stored in it as the Taum Sauk upper reservoir had.

Although not required, having an operator (or even just a night watchman) present at the top of the reservoir to monitor the filling evolution would have prevented the disaster. Ameren's Emergency Action Plan for the reservoir stated that the Toops would have 12 minutes warning if the upper reservoir were to break, however Ameren made no attempt to meet this commitment by assigning someone to visually monitor the reservoir for failure. The only warning the Toops had was the deafening sound of the torrent, stripping trees and boulders from the mountainside as it swept towards their house.

Many of the causes of the Taum Sauk disaster are also present at the Callaway Nuclear Plant: minimal staffing of operators, management ignoring the concerns of craft personnel, postponement of maintenance on equipment not necessary for the production of electricity, reluctance of engineers to agressively challenge management.

I believe that a new nuclear plant in mid-Missouri is the best option we have to meet our future electricity demands. However, we need to ensure that any new nuclear reactors, as well as the current one, will be operated by a utility which is willing to forego some of its profits in the interest

of safety. Ameren might operate Callaway Plant in strict compliance to bureaucratic processes, but that does not in and of itself make it safe. Callaway Plant must be staffed with workers who recognize what is right and are willing to challenge their superiors when allowed practices are inadequate. I once fit that description, and the management of the Operations Department drove me away because of it.

Please read the attached summary of the Toops' interview and consider the importance of stewardship and responsibility when entrusted with operating a power plant.

Larry

Lawrence S. Criscione
(573) 230-3959

MISSOURI STATE HIGHWAY PATROL
REPORT OF INVESTIGATION

STATE CONTROL NO.:	05 362 024 001	REPORT DATE:	01/31/06
REPORTING OFFICER:	SERGEANT W. W. WIEDEMANN 0696	TROOP OF OCCURRENCE:	G
OCC TYPE:	TAUM SAUK RESERVOIR BREACH		
COUNTY:	REYNOLDS	SCENE PROCESSED:	N
DATE/TIME:	DECEMBER 14, 2005		
OFFENSE STATUS:	INVESTIGATION CONTINUING	DDCC AT SCENE:	N
LOCATION:	LESTERVILLE		

VICTIM NAME: TOOPS, JERRY W.
ADDRESS: [redacted] MIDDLEBROOK, MO 63656
DOB: [redacted]
PHYSICAL DSC: SEX: M [redacted] RACE:
PHONE NUMBER: HOME [redacted] WORK

DETAILS OF INVESTIGATION

INTERVIEW OF THE TOOPS

1. On January 31, 2006, I continued the investigation into the failure of the Taum Sauk upper reservoir. During this investigation, I interviewed Jerry W. Toops and Lisa A. Toops at the Reynolds County Sheriff's Department.

2. On January 31, 2006, at 1333 hours, I met with Jerry and Lisa Toops at the Reynolds County Sheriff's Department. They also had their attorney with them, Steve D. Burmeister, telephone number 816-373-5590. The Toops agreed to talk to me about what had occurred on the morning of December 14, 2005, when the Taum Sauk upper Reservoir broke. The Toops are identified as follows:

a. Jerry W. Toops, date of birth [redacted] Missouri 63656, telephone number [redacted]

b. Lisa A. Toops, date of birth [redacted] Missouri 63656, telephone number [redacted]

3. Lisa Toops told me that present in their house that night was her husband, Jerry, and their three children. The children were identified as Tanner J. Toops, date of birth [redacted] Tara R. Toops, date of birth [redacted] and Tucker N. Toops date of birth [redacted]

4. Lisa had gotten up around 0400 hours and fed Tucker on the couch in their living room. She had then laid down on the couch and gone to sleep with Tucker. Lisa was awakened by a loud rumbling like a train. She at first thought it was a tornado and quickly got up with Tucker. She yelled to Jerry to help her get the kids. Lisa started down the hall to Tanner's room. The house began to fill with water as she got into the bedroom. Lisa helped Tanner to the top bunk and told him to say a prayer and hold his breath. The room rapidly filled with water completely covering the three of them. Lisa was trying to figure out how to get out of the water when the roof "cracked open". The three of

them were washed out of the house at this time.

5. Lisa was able to hold Tucker's head above water while they were washed away from the house. She was able to touch bottom after several minutes of floating in the waters. Lisa was able to get up and walk out of the water. She then heard Tanner calling to her. She answered him encouraging him to swim. Lisa then carried Tucker with her as she waded back into the water. She was able to swim to Tanner, who was still swimming in the water. She was able to get to him and pull him back to the shallow water. Lisa was too cold, tired, and numb at this time to walk. She pulled the children next to her and sat down in the shallow water. Lisa heard voices but lost consciousness. She woke up in the ambulance and was told they were working on her son. Lisa did not recall anything else until she was in the hospital. She was told that her entire family had been found. Lisa described her injuries as severe hypothermia and a serious case of poison ivy.

6. Jerry Toops began to tell me what had happened to him on the morning of December 14, 2005. Jerry had been sleeping in his bed when he heard Lisa scream. He heard a loud noise like a jet engine. He immediately recognized it to be rushing water. Jerry knew they were in danger from the reservoir. Jerry got out of bed and made it about two feet towards the baby's crib when the room exploded. Jerry said he rolled with it and found himself covered with water outside the house. He was able to swim to the surface and could only see water, trees, and boulders. He was able to swim to the house and climb on top of the roof. He ran around the roof of the house looking for his family, but was unable to find anybody. He then felt the roof began to move as the house floated off the foundation. Jerry continued to look for his family, but was unable to see anybody in the dark. The house began breaking up, and Jerry dropped into the water. He continued to swim with the debris from the house. The house eventually completely broke up. Jerry grabbed the tops of several trees trying to climb out of the water, but each time the tree came uprooted and washed away with him. He later saw a line of cedar trees and was able to grab one of them. Jerry climbed into the tree and waited until help arrived. Jerry thought he waited in the tree for approximately one and one-half hours.

7. While in the tree, Jerry heard someone calling. He answered and was told to wait; they couldn't get to him. Approximately fifteen minutes later, a second person got to him and helped him walk to the ambulance. Jerry told them the names of his family and about the intern who was living in temporary quarters near the Shut Ins. While he was in the ambulance, rescuers brought his son, Tucker, into the ambulance. Jerry heard Tucker crying and knew he was alive. They next brought Tara in, and she was unconscious. Rescuers later told him they had found the rest of his family; and they were alive. They were then transported to the hospital. Jerry described his injuries as hypothermia, a bulging disc, a puncture in his right foot, and his feet have been numb since the incident. He stated the children all suffered severe hypothermia. Tucker also had scratches all over his body. Tanner had to be resuscitated as he had stopped breathing. During the re-warming process, he also suffered four separate burns on his thighs. Lisa and Jerry were released from the hospital later that day. The children required more extensive hospital stays.

8. Jerry said he had been the superintendent at the park for

approximately six years. During this time, he was aware of the previous leaking problems at the upper reservoir. He was also aware the liner had been put in the reservoir. He had never been told of any overtopping or problems that were occurring at the reservoir. Jerry had received an emergency action plan from Ameren UE. This plan included a diagram showing the areas that would be inundated by water in the event of a breach. The plan showed the water stopping short of his house. He had also been told in the event of a breach, he would be immediately called giving him approximately twelve minutes to evacuate his family before the water would reach his residence. Jerry was upset that he had not received any warning that the dam had broken. He was also unaware the reservoir was remotely pumped and no one was watching the reservoir to see it breaking and notify him. This he felt caused him not to be notified before the water struck his residence. The interview was concluded at approximately 1500 hours.

9. This investigation is continuing.

W. W. Wiedemann, Sergeant
Division of Drug and Crime Control

WWW:klb