



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

March 8, 2012

IA-11-061

Mr. Edward G. Johnson
[HOME ADDRESS DELETED
UNDER 10 CFR 2.390(A)]

SUBJECT: COMPLETION OF ACTION 2 OF CONFIRMATORY ORDER

Dear Mr. Johnson:

The purpose of this letter is to acknowledge receipt of your electronic mail message dated March 6, 2012, which provided an action required by the Confirmatory Order issued to you by the U. S. Nuclear Regulatory Commission (NRC) on January 25, 2012. A copy of that message is enclosed with this letter.

We reviewed the document that you provided and found that it was responsive to the requirements associated with Section V.2 of the Confirmatory Order. We have no further questions regarding Section V.2 of the Confirmatory Order.

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

If you have any questions concerning this matter, please contact me at (630) 810-4373.

Sincerely,

/RA/

Steven K. Orth
Enforcement/Investigations Officer

Docket No. 55-33166
License No. OP-31438

Enclosure:
Electronic Mail Message dated March 6, 2012

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Letter to Edward Johnson from Steven Orth dated March 8, 2012.

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From: Ed Johnson [xxxxxxxxxx@xxxxx.xxx]
Sent: Tuesday, March 06, 2012 5:20 PM
To: theproseditor@nucpros.com; thePROSooffice@nucpros.com
Cc: Orth, Steven; Chuck Thebaud; Ed Johnson
Subject: Article submission for The Communicator
Attachments: ATC Operator Event at Palisades.doc

Mary,

I would like to submit the attached article for consideration of publishing in the Communicator.

Thank you,

Ed Johnson

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An Unforgettable Night - ATC Operator Event at Palisades

Introduction

On the early morning of October 23, 2010, I left the ‘at the controls’ area of Palisades nuclear plant without a proper relief or turnover. Up until that time, I had always considered myself to be a very conscientious and safe operator. I never imagined that I would leave the control room without a proper turnover – but I did. I hope by writing this article, others can learn from my mistakes and avoid making the same or any similar mistake. With that objective, this article describes the events that led to my actions, the effect this event has had on me, the lessons I have learned, and my experiences with the NRC investigative and enforcement processes.

Description of Events

Palisades was nearing the end of a refueling outage, which was on course to be our most successful ever due to the short duration and large number of major projects completed. We were about to enter our third reduced inventory period to perform a vacuum fill operation.

This vacuum fill procedure was relatively new for Palisades, having successfully performed it for the first time during the previous refueling outage. It is a procedure to lower the water level in the reactor to the middle of the hot leg, and then draw a vacuum on the Primary Coolant System (PCS) to evacuate air and other non-condensable gasses. We devised this procedure in an effort to improve plant reliability—specifically to extend the life of our control rod drive mechanism pressure boundary seals.

When I took turnover for “at the controls” reactor operator (“ATC operator”), the plant was in reduced inventory with the PCS drain lineup secured, but we still needed to complete the drain to the middle of the hot leg. I went to the shift meeting and came back to find a high temperature alarm on the Electro Hydraulic Control (EHC) system, the hydraulic fluid system that operates our main turbine valves. Apparently, the work control center was supporting vendor testing of the EHC system. Another reactor operator left the control room to help get the issue under control. When the reactor operator came back, he stated that cooling water was lined up and, because of the low system flow, it would take a while for the temperature to come back into specifications, but everything was under control.

The Control Room Supervisor then held a brief to continue our PCS drain to mid-loop. He briefed a drain rate of about 100 gpm, which would take approximately 17 minutes to hit our target PCS level. During the brief, I mentioned that during my turnover briefing, I heard that the reactor head did not have a vent path. The operator I relieved recommended a slow drain; so we decided to lower the drain rate to about 50 gpm, which would take just over a half hour. We lined up the drain path and commenced, but the PCS level indications did not respond as expected and we stopped the drain. We went through many iterations of starting and stopping the drain while we performed calculations to compare PCS level indications. During this period, we had

Auxiliary (non-licensed) Operators (AO's) troubleshoot the problem by verifying level glass and vent path lineups.

Concurrent with the PCS drain, most of the control room staff was at the Infrequently Performed Test and Evolutions (IPTE) brief for the vacuum fill work. While this occurred, we had more issues with the EHC system; a reactor operator called the control room and stated he was not sure we had a good EHC flow path. I felt this was a problem that required reviewing the prints and was too distracting with the PCS drain taking place while in reduced inventory, so I handed off the call to a different operator. They verified the flow path and cooling again outside of the control room. I told a Senior Reactor Operator that we were having issues with the EHC system, but he was busy overseeing the PCS drain.

The high EHC temperature alarm cleared, and I thought that issue was under control. A few moments later, however, the EHC low level alarm came in. I was not in the communication loop, but I understood it was being handled. Several minutes later, the low level alarm was still not clear and I was concerned about a possible leak, so I secured the pump. I quickly heard back that there was a spill, but it was stopped and they were in the process of refilling the reservoir. Consequently, they requested that the pump be placed in service for their vendor work, stating the cooling and flow path issues were solved. This was all happening while the PCS level indication troubleshooting was in progress.

Eventually, Maintenance workers removed some temporary flange covers on the reactor head for a better vent path. This work solved the indication problems and we were able to get a good PCS drain, with accurate level indications. The drain that we initially briefed to be about 17 minutes ended up taking over three hours.

After we got to mid-loop, I lowered shutdown cooling flow to about 3100 gpm, which was the high end of the vacuum fill requirements. While I was doing this, another reactor operator (Operator 1), who was primarily responsible for implementing the vacuum fill procedure, commented that he did not like the pace I was making my adjustments. Then we began several hours of trying to complete the PCS vacuum fill, but a number of issues accompanied that work.

The previous time we performed the vacuum fill procedure, it worked flawlessly, but this time was different. The vacuum did not rise in the manner expected; instead of a smooth trend of rising vacuum, PCS pressure changed erratically and vacuum developed much slower than anticipated. There was indication of a leak somewhere that was intermittently venting and allowing pressures to equalize throughout the system. Operator 1 was leading the AO's in troubleshooting efforts, trying to determine exactly what was happening.

While Operator 1 and other members of the control room staff were troubleshooting the problems with vacuum fill, we received the low critical service water alarms and entered a procedure for "Loss of Service Water." Because Operator 1

continued to troubleshoot the vacuum fill problems, the Control Room Supervisor (CRS) had to come down off the CRS' "island" and speak with me directly to ensure effective communications during this very active period in the control room. I believed that Operator 1 should have stopped his work as we addressed this Off Normal Procedure. I should have said something at that time. I did not because the low header pressure cleared immediately when I started the standby service water pump and I resumed my monitoring of the PCS parameters. My frustration with Operator 1, however, remained and, as I will discuss, it affected my judgment later during the shift.

We soon learned that the work control center sent out a lube and stroke PM for the main lube oil service water isolations, and that was probably the cause of the low header pressure. The plant remained stable while this was going on, so the Control Room Supervisor held a crew brief to exit the Off Normal Procedure. My frustration with Operator 1 grew when he did not pause for this briefing. Still, I did not act to resolve my differences with Operator 1.

We ultimately achieved the required vacuum for the procedurally required one hour hold time. During the hold, I noticed the shutdown cooling flow rate had slowly started to trend down to 2900 gpm on its own and I voiced my concerns to the Control Room Supervisor. I showed him the one minute shutdown cooling flow rate trend on the Palisades Plant Computer (PPC), and said there may be some vortexing or other flow phenomenon that I did not understand. We agreed that, for now, it just put us closer to our target flow rate for this evolution and he directed me to adjust it up if I needed to keep it above 2810 gpm. He stated we could also enter the LCO, if necessary.

I continued closely monitoring plant parameters using the Palisades Plant Computer. The PPC plots data from most of the different transmitters in the plant; it is an invaluable tool because we can refine the axes and time ranges of the data plots to see how parameters are changing over short and long durations. Data can be plotted in a very tight band so minute changes can be easily detected. Generally, the screen is split into quarters with four separate windows that each trend six data points. There is a special computer designated for the at the controls reactor operator to monitor the plant.

Suddenly, however, PCS level indication sharply fell to an elevation below the bottom of the hot leg. We immediately stopped the evolution and broke vacuum. Shutdown cooling flow remained stable, so we were obviously not that low, but it was unsettling for me to see reactor vessel water level drop so quickly and so low. As PCS pressure rose, the primary coolant level slowly recovered to an expected value and I received the order to raise the PCS level to exit reduced inventory.

By this time, it was early morning and we exited reduced inventory during SRO turnover. I was using the Palisades Plant Computer System data to make my log entry stating the fill was secured when Operator 1 caught me off guard by exiting the windows on the PPC I was using. I told him to stop and that I was using the PPC data to make my log entry. Operator 1 continued to use my PPC, which upset me. After I finished making my log entry, I told him that if he wanted to take control of my computer, he could be the

ATC operator. Then, I walked out of the control room. As I was walking out, Operator 1 said he could not be the ATC operator because he had not received a turnover. Additionally, as I was walking out, the CRS told me to wait. I felt I was too angry to be the ATC operator and needed a moment compose myself and I went across the hall.

Immediately after I left, the CRS turned over the ATC operator duties to another qualified operator, Operator 2, who was also on-shift.

After spending about five to ten minutes across the hall, I regained my composure and returned to the control room. I received a turnover from Operator 2 and again took the watch as the ATC operator until the end of the shift.

Immediate Effects of the Incident

The events that night have had both an immediate and long-term effect on me. And, as you will see, they have profoundly affected my career.

When I returned to work two nights later, I was stopped at the gate by the Operations Manager. He took my statement with a union representative present, and then sent me home to write a formal statement. I was told not to come to work until so directed. Two weeks later, I returned to work, but I was not authorized unescorted access to the plant for about another two weeks. A week after regaining unescorted access, I was given a disciplinary hearing and a week off without pay. After this disciplinary suspension, I started on a long remediation plan, which included a psychological evaluation, anger management counseling, and direct observation by operations management for five months. My control room access was also terminated for nine months.

Corrective Actions

As I mentioned above, management prepared a significant remediation plan for me to complete before I could be eligible for consideration to return to the control room as a licensed reactor operator. In addition to the actions mentioned above, I must satisfactorily complete the following:

- Research the responsibilities of a licensed operator, including legal responsibilities and enforcement action operating experience, and provide a detailed report to site Senior Leadership and make presentations to all Operations personnel.
- Perform a two month Work Control Center or Procedure Writer Assignment with weekly/bi-weekly interviews (professionalism, standards, expectations, initiative) with the Assistant Operation Manager – Support and the Assistant Operations Manager – Shift to determine if I can continue the remediation plan. (This actually turned into three months of procedure writing, then reassignment to the Off Shift Tagging Authority for work as a tag-out preparer.)

- Complete 40 hours of under instruction watch with each of the five different crews and receive an individual evaluation and approval from each shift manager.
- Develop a written response to site Senior Leadership on why my license duties should be reinstated.
- Participate in interviews with different levels of company management to discuss my performance, including the General Manager of Plant Operations, and Site Vice President. The remediation plan also allowed for an interview with the Chief Operating Officer, if required.

Lessons Learned

I have learned many lessons from this event. As I indicated in the Introduction, I always considered myself to be a very conscientious operator, who would never do anything that could impact the safe operation of the plant. I know now that challenging operational conditions and personalities can affect us in unanticipated and undesirable ways. This event taught me that we must all recognize that we are susceptible to errors in judgment. This means that we must remain vigilant, never become complacent, and never think that we are impervious to mistakes. It happened to me and I never saw it coming.

Of course, vigilance is important for all nuclear workers, but even more so for licensed reactor operators. There is no excuse for failing to pay attention to the plant, particularly for the at the controls operator. And there is no excuse for not ensuring that a qualified operator has a thorough turnover before leaving the control room.

I also learned about the importance of teamwork. Operators are part of a team, and we need to utilize all of the resources available to overcome problems and adverse situations. I should have asked for help as soon as I became frustrated. The Control Room Supervisor and others are there to resolve issues and ensure that the crew operates safely and effectively. I did not seek any assistance from anyone at any time. Instead, my frustrations grew during the night and, in the end, I let my emotions dictate my actions – not my experience and training.

Additionally, I learned the importance of being able to work with others who may have personalities that differ from mine. Let me be clear; I am not in any way blaming Operator 1 for my actions. I may have disagreed with his use of the PPC, but that did not excuse my departure from the control room. As I mentioned earlier, if I could not resolve my differences with Operator 1, I should have asked for help, while remaining at my post. We will always have people with different personalities, different backgrounds, and different perspectives on shift. Diversity actually strengthens the team. I learned the importance of staying focused on the important matters, and not letting personal differences affect my decision making and performance.

As a licensed reactor operator, our first and foremost duty is to protect the core and thereby ensure the health and safety of the public. Nothing else comes close. Personal differences have no place in the control room and can play no role in our actions.

Finally, I should have initiated – or asked supervision to initiate – a condition report to document the event. A disagreement in the control room that adversely affects teamwork and the departure of an operator without a turnover are both conditions which required documentation and resolution. The site’s corrective action program exists to record such events, to determine the circumstances, and to take corrective actions to prevent recurrence. The proactive use of the corrective action program strengthens the program, and the overall performance of the site and fleet.

Interactions with the NRC

I mentioned at the beginning of this article that I would address the effect of this event on me. Apart from the discipline and corrective actions that I have already discussed, my actions caused the NRC to initiate an investigation and enforcement action against me. In other words, this event put my job and my family’s financial security in jeopardy.

Without going through all of the details, others may benefit from a brief overview of what that process entails and how it can dominate your professional and personal life.

The event happened in October 2010. The Company conducted an internal investigation, which took place in November. In April 2011, the NRC sent a special agent from the Office of Investigations (OI) to perform the agency’s investigation.

As you would suspect, the agent interviewed me, among others. At my request, the Company provided me with an attorney to help me through the process. (I had attempted to find my own local attorney, but no one would even discuss the case with me.) Because the NRC OI agents conduct formal, transcribed interviews, under oath, it is essential to be prepared and to tell the truth. I was well prepared and I told the truth, but the interview and the other aspects of the investigation were very difficult. Answering accurately detailed questions about an event that occurred many months ago is challenging at best. Knowing that your employment may be on the line only adds to the challenge and the anxiety.

Significantly, the investigation and enforcement processes are not quick. In fact, I learned of the results on October 28, 2011 – over one year after the event. On that day, I met with the Director of the Division of Reactor Projects, Region III, who presented me with a letter, which contained an allegation that I had deliberately violated the terms of my license by leaving the control room without receiving a proper turnover. The letter showed me the procedure steps and linked the wording in my license to the “apparent violation”, which the letter said was being considered for escalated enforcement. An

apparent violation means that an official violation has not yet been issued, and may not be issued, depending on the outcome of the choices outlined in the letter.

The letter gave me ten days to choose from three options. I could elect to use the NRC's Alternative Dispute Resolution (ADR) process, the Predecisional Enforcement Conference (PEC), or do nothing at all and allow the apparent violation to stand.

I chose to use the ADR process, which was really mediation between the NRC and me. A professional mediator, who is a neutral, third party, facilitated the mediation. The mediator's job is to work with the parties in an attempt to find an outcome that is acceptable to both sides. If the dispute cannot be resolved through mediation, the matter follows the traditional enforcement process, *i.e.*, a PEC, which is essentially a trial. In a PEC, the employee appears before a panel of NRC officials, who ask about questions about the event. The NRC uses the information in the PEC to make an enforcement decision.

As I indicated, I chose ADR and I am pleased with my choice. Although quite stressful, the mediation was probably a lot less stressful than an enforcement conference. The mediation took place in a conference room at Region III headquarters. My attorney and I met with the mediator, the Acting Regional Administrator, the Region III Enforcement/ Investigations Officer, and the Regional Counsel. I made a presentation to the NRC officials, who asked a number of clarifying questions. Their questions sought to give them a better understanding of the facts and, I think, a better understanding of me and my actions. Their questions were sometimes difficult, but they were fair and appropriate. As you would probably suspect, it is not easy to re-live a night that you would rather forget or to discuss in detail how you failed to meet your obligations under your license, your personal expectations, the expectations of the Company, and the expectations of the NRC.

Although difficult, that process was, in the end, effective and good. We reached a mutually agreeable resolution, which appears in a public Confirmatory Order. Moreover, I have an appreciation for the NRC's views and my personal shortcomings that I probably would not have had, but for this process. This event has made an indelible impression on me and I will be a better operator because of it. I am convinced that nothing of this sort will ever occur again.

Legal Responsibilities of the At the Controls Operator

The final results were over a year off shift and thousands of dollars lost, plus immeasurable emotional stress for me and my family. But I do not contest the results or challenge the consequences because I did not act appropriately when I left the control room without conducting a turnover. Here is a synopsis of the legal responsibilities of the at the controls reactor operator taken directly from Regulatory Guide 1.114 "Guidance to Operators in the Control Room of a Nuclear Power Unit":

- Adhere to the unit's technical specifications, plant operating procedures, and NRC

regulations;

- Review operating data, including data logging and review, to ensure that the unit is operating safely; and
- Be able to manually initiate engineered safety features during various transient and accident conditions.

To carry out these and other responsibilities in a timely fashion, the ATC operator of a nuclear power unit must pay attention to the condition of the unit at all times. The operator must be alert to ensure that the unit is operating safely and must be able to take action to prevent any progress toward an unsafe condition. This is facilitated by control room design and layout in which all controls, instrumentation displays, and alarms required for the safe operation, shutdown, and cooldown of the unit are readily available to the operator in the control room. Also, of course, the ATC operator is required to stay in the at the controls area at all times unless properly relieved.

The license given to a reactor operator represents a special trust to protect the health and safety of the public. As licensed operators, we have a personal responsibility entrusted in us, we are special. We do have a different set of standards because so much rides on our actions. We cannot be distracted from our purpose. We must be ever vigilant in our efforts, and when challenges do arise, we must pull together as a team to succeed.