U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/94026(DRS); 50-455/94026(DRS)

Docket Nos. 50-454; 50-455 License Nos. NPF-37; NPF-66

EA 94-265

Licensee: Commonwealth Edison Company
Byron Nuclear Power Station
4450 North German Church Road
Byron, IL 61010

Facility Name: Byron Nuclear Power Station, Unit 1 and 2

Inspection At: Byron Nuclear Power Station
Byron, Illinois

Inspection Conducted: November 29 through December 20, 1994

Inspectors: R. M. Bailey, Operator Licensing Section 2
N. D. Hilton, Division of Reactor Project
R. C. Paul, Office of Investigations

Approved By: T M Burdick 12-30-94
T. M. Burdick, Chief Date
Operator Licensing Section 2

Special Inspection Summary

Inspection from November 29 through December 20, 1994 (Reports No. 50-454/94026(DRS); No. 50-455/94026(DRS))
Areas Inspected: Special, reactive safety inspection to review the circumstances surrounding the failure to have a licensed senior operator in the common control room for twenty two (22) minutes on October 14, 1994, with one unit in Mode 1, power operations.
Results: Two apparent violations were identified involving the (1) failure to maintain a licensed senior operator in the common dual unit control room with a unit in other than cold shutdown or refueling in accordance with 10 CFR 50.54(m)(2)(iii); and (2) failure to record this occurrence in the operations shift logs in accordance with Technical specification 6.8.1.

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Related concerns are listed below:

- The only licensed senior operator in the control room was preoccupied with a main feed pump oil filter swap over evolution in the plant and walked out without consciously recognizing that he had the duty.
- The licensed senior operator position in the control room (SCRE) was relieved following a brief turnover and with no formal notification to the operating crew.
- Shift management position (Shift Engineer) failed to record this occurrence in the shift logs and failed to properly convey the significance of this occurrence to senior management.
- Licensee's shift management was aware of the possibility that a relief SCRE could walk out of the control room and failed to convey this concern to senior management for consideration of appropriate corrective action(s).

REPORT DETAILS

1. Purpose (IP 92901)

The purpose of the inspection was to review the actions taken by the licensee based on inspection unresolved item 455-94011-01 (DRP) and Licensee Event Report (LER) 454/94015. This inspection pertained to the circumstances surrounding the failure to have a licensed senior operator (SRO) in the common dual unit control room for twenty-two (22) minutes with a unit was in Mode 1. This was discovered by the licensee on October 14, 1994.

2. Description of Event

a. October 14, 1994 (Friday)

At approximately 1:30 a.m. an Equipment Attendant (EA - nonlicensed operator) noted an oil filter differential pressure problem on a Unit 2 Main Feed Pump (MFP). The EA proceeded to the Shift Engineer's Office, which is adjacent to the main control room (MCR), to discuss his concern with the Unit 2 Shift Foreman (SF2 - inplant SRO). The EA was inexperienced and asked the SF2 for assistance during the task. Following their discussion and subsequent decision to swap filters with the SF2's help, the EA proceeded into the MCR to obtain the Unit 2 Nuclear Station Operator's (NSO2 - Reactor Operator) concurrence. At 1:33:39 a.m. the EA entered the MCR.

At 1:48:13 a.m. the SF2 entered the MCR for the purpose of continuing the discussion about the MFP oil filter swap over with the EA and NSO2, and to perform a routine review of control room status. At 1:58:31 a.m. the SF2 exited the control room (reason unknown) for approximately three minutes.

At 2:01:38 a.m. the SF2 entered the MCR and was approached by the Senior Control Room Engineer (SCRE - control room SRO), at which time the SF2 was asked to assume the control room SRO duties to allow the SCRE to take a plant tour. Following a brief turnover (covering about a minute), the SCRE was relieved and he proceeded out of the MCR. At 2:03:18 a.m. the SCRE exited the MCR. Neither the SCRE nor the SF2 made any announcement of their turnover to the crew.

At 2:10:30 a.m. the SF2 (being the only SRO in the MCR), informed the NSO2 that he was going with the EA into the plant and exited the MCR. Subsequently, both of them proceeded to the Unit 2 MFP to perform the oil filter swap over. Upon completion of the task, which took some eight minutes, the EA left the SF2 standing in the area of the MFP and proceeded to the main control room. At 2:19:03 a.m. the EA entered the MCR.

At 2:24:04 a.m. the Unit 1 Nuclear Station Operator (NSO1) received a mid-shift relief by an extra NSO and exited the MCR. The NSO1 proceeded out of the MCR to conduct a plant tour without noticing whether any SRO was present. The unit NSOs are not required to acknowledge a mid-shift relief to the SCRE.

At approximately 2:30 a.m. an Equipment Operator (EO) called the MCR to inform the SCRE that maintenance personnel needed to talk to him. This call initiated a visual search for the SCRE, at which time it was noted that no SRO was within sight. An immediate search of the entire MCR area was initiated. Upon discovery that no SRO was present in the MCR, the center desk NSO attempted to establish radio contact with an SRO (three calls were made within a minute). Upon hearing and understanding the second radio call, the SF2 recognized his error and immediately proceeded to the MCR. At 2:32:27 a.m. the SF2 entered the MCR, some twenty two (22) minutes after leaving. The SF1 responded to the third radio call for assistance, proceeded to the MCR and entered the MCR at 2:34:36 a.m. The SCRE, having no radio in hand, returned to the MCR at 2:37:58 a.m. to resume his normal duties.

Immediately following his turnover and relief by the SCRE, the SF2 proceeded out of the MCR and reported the incident to the Shift Engineer (SE - licensed senior operator). A discussion between the SE and SF2 centered on concern for what, if any, violation had occurred. Their main focus of discussion was centered around shift manning requirements in the Technical Specifications (TS); since minimum manning had been satisfied, the SE and SF2 concluded that the significance was minimal and further action was delayed until the next shift (12 hours later). No shift log entry of this occurrence was recorded.

b. October 15, 1994 (Saturday)

During the early morning hours, the SE and SF2 involved in the incident, recognized that a Technical Specification violation had occurred and a problem identification form (PIF) was filled out by the SE. The licensee's senior management was verbally informed by the SE, some time that morning, about the incident. The understanding was that it involved administrative controls regarding the control room licensed senior operator's (SRO) relief and subsequent departure from control room. No shift log entry of the reportable occurrence was recorded.

c. October 17, 1994 (Monday)

During the early part of the day shift, the PIF was reviewed and discussed among senior management before being sent to a PIF Screening Committee for review. The PIF Screening Committee identified the event as a violation of Byron Technical Specifications section 6.2.2 and 10 CFR 50.54(m)(2)(iii). Licensee's management was informed of the significance and reportability for this incident and an investigation was initiated.

d. October 19, 1994 (Wednesday)

During the early part of the day shift, the Senior Resident Inspector was informed of the licensee's intention to issue a LER concerning the failure of having an SRO license operator in the control room.

3. Apparent Violations

a. Apparent Violation 1

The NRC inspectors reviewed plant security records for the morning of October 14, 1994. The occurrence of no SRO in the common dual unit control room with a unit at power operations was verified with a duration of 21 minutes 57 seconds. This was an apparent violation of Technical Specification 6.2.2.b and 10 CFR 50.54(m)(2)(iii) which requires a nuclear power unit operating in any mode other than cold shutdown or refueling, as defined by technical specifications, to have a person holding a senior operator license in the control room at all times. (50-454/94026-01(DRS); 50-455/94026-01(DRS))

b. Apparent Violation 2

The NRC inspectors reviewed the operation's shift logs covering October 14, 1994 and October 15, 1995. The absence of an SRO in the common dual unit for 22 minutes was not recorded. This was a reportable occurrence and required documentation in the operations shift logs in accordance with administrative procedure (BAP) 300-1, Conduct of Operations, section C.5.a, and (BAP) 350-1, Operating Logs and Records, section C.1.c, which govern shift operations. The failure to record this incident was an apparent violation of Technical Specification 6.8.1 which states that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A, of Regulatory Guide 1.33, Revision 2, February 1978, which includes administrative controls governing shift logs. (50-454/94026-02(DRS); 50-455/94026-02(DRS))

4. Determination of Root Causes and Management Involvement

The NRC inspectors reviewed the PIF, selected logs and records, and conducted interviews to determine the root cause(s) and contributing factors. This review revealed that on at least one other occasion, an opportunity existed for the licensee to self-identify and correct the problem. However it was determined that this opportunity was missed.

The root cause of this incident was the licensed senior operator's inattentiveness to duty in that he did not put aside his normal responsibilities as inplant supervisor upon accepting the responsibilities as control room supervisor. Major contributors were a lack of (1) formalized procedures to address mid-shift reliefs, (2) personal responsibility when assuming the position of control room SRO;

(3) notification within the control room environment of who had the duty. Additionally, shift management personnel (SE) failed to record this incident based upon a lack of understanding of the reportability of a violation of the administrative requirement's specified in Technical Specifications addressing staffing and manning.

Interviews conducted with licensed operators and management revealed the potential for and likelihood of prior occurrences. The position of Shift Foreman (unit Shift Supervisor) is responsible for directing normal and abnormal activities outside of the control room for his/her assigned unit. Even though the Shift Foreman's (SF) position allows freedom to come and go within the plant as needed, administrative controls require the SF to routinely check in with the control room SRO and unit NSO for updates. Since licensed senior operators assigned to the SF position do not routinely take on the control room SRO (SCRE) position responsibilities other than as a mid-shift relief (generally for no more than fifteen minutes at a time and usually once per shift), the operators acknowledged that a relief SRO could leave the control room inadvertently.

The NRC inspectors were informed that on several occasions the licensed senior operators assigned to the SF position were taking independent measures, such as placing rubber bands or paper clips on their security badge, to remind themselves that they should not leave the control room during the period when they had the responsibility for the SCRE position. Also, some of the individuals were moving their security badge to a different location on their body in order to remind themselves that they had the SCRE responsibility. A large number of the individuals interviewed acknowledged that "near miss" situations had occurred on more than one occasion. A "near miss" was defined as approaching the exit door with the intent of leaving but not exiting based upon a last minute recognition that he/she had the control room responsibility.

Licensee's management was questioned regarding their root cause investigation and the NRC inspectors were informed that they had no knowledge of any prior occurrence(s) and had determined not to investigate for prior incidents since the corrective actions completed and/or proposed should prevent future occurrences. The NRC inspectors' identified a concern that prior occurrence(s) might have happened. Based upon that concern, additional interviews were conducted and information gathered revealed the possibility of one or more occurrences prior to October 14, 1994. The NRC inspectors informed the licensee's management of this new information and requested that an investigation of plant records be initiated to address this issue. The licensee determined that one prior occurrence had taken place on February 12, 1994, covering a period of less than a minute. The licensee is continuing their investigation to determine the extent of this problem.

5. Licensee Corrective Actions

Upon recognition of the significance of the event, Operations Management implemented the use of a "clasp" that must be worn on the SCRE's badge to remind him/her of the fact that he/she has the control room SRO responsibility. Additionally, the Shift Foreman and Shift Engineer involved were counselled and disciplined.

An Operations Daily Order was issued on October 19, 1994 to inform all licensed operators of the occurrence and emphasize the seriousness of this event. A Licensee Event Report (LER) was issued on November 11, 1994.

The licensee's long-term corrective actions included:

a. Assignment of additional training on this event, the importance of adherence to all Technical Specifications, and the importance of the SRO's duties in the main control room.

b. Review and implementation of revisions to operating policies and administrative procedures to ensure that the importance of the SRO's duties in the main control room is clearly understood and communicated. Enhancements to conduct of turnovers, particularly mid-shift reliefs, was considered.

c. Review of the Byron Station Security computer system for enhancement to allow restriction on or actual prevention of the last SRO in the main control room from key carding out except in an emergency.

The inspectors reviewed the licensee's event screening process and procedures. The licensee properly identified the reportability and level of severity for this incident. However, the root cause investigation did not identify the potential for prior occurrences.

6. Exit Meeting

An interim exit meeting was conducted on December 9, 1994 to discuss the preliminary findings. A final exit meeting was conducted on December 20, 1994 to discuss the major areas reviewed during the inspection and the inspection findings. The licensee did not identify any documents or processes as proprietary.

ENCLOSURE 2

Persons Contacted

1. Licensee

+K. L. Graesser, Site Vice President
*+G. K. Schwartz, Station Manager
*+T. E. Gierich, Operations Manager
*+R. F. Wegner, Shift Operations Supervisor
* M. Snow, Work Control Superintendent
* E. J. Campbell, Maintenance Superintendent
* D. J. Popkins, Operating Engineer
* P. J. O'Neill, SQV Audit Supervisor
*+D. O. Brindle, Regulatory Assurance Supervisor
* P. R. Johnson, Technical Superintendent
* T. K. Higgins, Services Director
* B. G. Jacobsen, Operations RCE
*+J. K. Heaton, Operations Training Supervisor
* G. L. Heesaker, Operations Shift Engineer
*+P. G. Enge, NRC Coordinator
+T. K. Schuster, SQV Director

2. NRC

* H. Peterson, NRC Senior Resident
+C. H. Brown, NRC Resident
*+T. M. Burdick, NRC Section Chief

*Denotes those attending an interim exit interview conducted on December 9, 1994.
+Denotes those attending a final exit interview conducted on December 20, 1994

The inspectors also interviewed several other licensee employees that are not mentioned.