

March 10, 2000

Mr. Oliver D. Kingsley
President, Nuclear Generation Group
Commonwealth Edison Company
ATTN: Regulatory Services
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: BYRON INSPECTION REPORT 50-454/2000006(DRS);
50-455/2000006(DRS)

Dear Mr. Kingsley:

On February 16, 2000, the NRC completed an inspection at your Byron Nuclear Generating Plant reactor facility. The enclosed report presents the results of that inspection.

The inspection consisted of a selective examination of procedures and representative records and interviews with staff. The objective of the inspection effort was to determine whether activities associated with selected aspects of the non-licensed operator training program were conducted safely and in accordance with NRC requirements.

Based on the results of this inspection, no violations of NRC requirements were identified. The new training program met the requirements of 10 CFR 50.120 in the areas reviewed; however, the overall effectiveness of the program could not be assessed because the training had not completed by the end of the inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

David E. Hills, Chief
Operations Branch

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

Enclosure: Inspection Report 50-454/2000006(DRS);
50-455/2000006(DRS)

See Attached Distribution

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-454/2000006(DRS); 50-455/2000006(DRS)

Licensee: Commonwealth Edison Company (ComEd)

Facility: Byron Generating Station, Units 1 & 2

Location: 4450 North German Church Road
Byron, IL 61010

Dates: February 7, 8 and 16, 2000

Inspector: A. M. Stone, Senior Operations Inspector

Approved by: David E. Hills, Chief, Operations Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Byron Generating Station, Units 1 & 2
NRC Inspection Report 50-454/2000006(DRS); 50-455/2000006(DRS)

This special 3-day announced inspection of selected aspects of the non-licensed operator training program included a brief comparison of the previous training program with the newly implemented program, interviews of staff, review of implementing procedures, and evaluations of corrective actions and self-assessments.

Operations

In general, the new non-licensed operator training program met the requirements of 10 CFR 50.120 in the areas reviewed and in the opinion of those interviewed, would produce qualified individuals to perform the assigned tasks. However, because the training had not been completed and the individuals had not performed their new duties, the overall effectiveness of the new training program could not be evaluated at this time (Section O5.1).

The new non-licensed operator training program was less performance-based than the previous program; however, the classroom instruction was equivalent. Some deficiencies in the program implementation, such as unclear expectations, were identified. For example, operations and training management personnel involvement in observing on-the-job training (OJT) and task performance evaluations (TPEs) was minimal. In addition, the licensee did not provide sufficient oversight of the equipment operators re-training on equipment attendant tasks, in that, the completion of the qualification guidebooks did not appear to meet licensee management expectations (Section O5.1).

The Nuclear Oversight organization provided thorough, insightful, and critical reviews of the non-licensed operator training program. Concerns with respect to the conduct of OJTs, TPEs, and job performance measures were identified. The licensee's corrective actions to address these concerns were acceptable. The corporate-sponsored and operations department self-assessment concluded that the non-licensed operator training program met the requirements of 10 CFR 50.120 (Section O7.1).

Report Details

I. Operations

O5 Operator Training and Qualification

O5.1 Evaluation of the Non-Licensed Operator Training Program

a. Inspection Scope (71707)

The non-licensed operator organization consisted of two groups: (1) equipment operators (EOs) who were responsible for radioactive waste processes and high voltage systems (HVS); and (2) equipment attendants (EAs) who were responsible for general system rounds. The training program consisted of several weeks of classroom instruction followed by on-the-job training and evaluation. A small number of individuals were enrolled in the program at one time. In late 1998, the licensee decided to merge the EO and EA groups and their respective job responsibilities into one non-licensed operator (NLO) classification. In January 1999, the licensee modified the non-licensed operator training program to facilitate this change. Under this new program, training was conducted over a 15-month period during the training week of the shift's six-week rotation cycle. On-the-job training (OJT) and task performance evaluations (TPEs) were conducted on-shift during this 15-month period. Forty-four individuals were enrolled in this program which was scheduled to end March 31, 2000.

The inspectors interviewed EOs, EAs, field supervisors, training management personnel, and operations management personnel to ascertain whether selected aspects of the new program met the requirements of 10 CFR 50.120. The inspectors also reviewed the documents listed in Attachment 1 as well as:

- PIF B200000133, "Training - Quality vs Quantity"
- PIF B199904392, "Disregarding Rules and Past Practice"
- EA Reclamation Guide
- Migration Plan - NGG Non-Licensed Operator Initial Training Program Description
- CWPI-NSP-TQ 1-22, Revision 0, "Non-Licensed Operator Migration Training Program"
- CWPI-NSP-TQ 2-3, Revision 0, "On-the-Job and Task Performance Evaluation"

b. Observations and Findings

In general, the new training program (referred to as the "Migration Program") met the requirements of 10 CFR 50.120 in the areas reviewed, in that, a systems approach to training as defined in 10 CFR 55.4 was established and adequately implemented.

During the interviews, the EAs discussed concerns with the training program; however, each concluded that he/she would be trained to perform the tasks once the certification process was complete. The inspectors noted the following:

- Training Material: The inspectors reviewed the high voltage switchyard lesson plans and determined that the same material was presented during both training programs. However, the inspectors concluded that the migration program was less performance-based than the previous program and therefore, was less rigorous. More OJTs and TPEs were simulated rather than performed because in most cases, the opportunity to perform some activities (such as starting an emergency diesel generator) could not be afforded to all 44 trainees. As a result, some activities will not be performed by all non-licensed operators until after certification. The licensee indicated that the non-licensed operators could request additional assistance when performing an evolution for the first time.

In addition, the inspectors noted that technical errors found in the training material were adequately evaluated and resolved using problem identification forms (PIFs) and training feedback forms.

- Final Certification Process: Both programs required the trainee to pass written examinations and perform five job performance measure (JPM) tasks. In the previous program, a “check-out” interview which consisted of answering system-type questions and a plant walk-through with shift management was required. The inspectors could not evaluate the new program’s final certification plan because the licensee had not issued expectations with respect to the final interview process by the end of the inspection period.

The inspectors noted that in the previous program, prior to HVS certification, the trainees were given an oral board by corporate load dispatch personnel. The new migration program eliminated the requirement for the oral board because the corporate load dispatch personnel concluded the classroom material, OJT and TPE activities, and the final examination were sufficient.

- Implementation Issues: With the exception of some issues documented in PIFs and addressed in the licensee’s corrective action program, the licensee implemented the migration program in accordance with CWPI-NSP-TQ 1-22 and CWPI-NSP-TQ 2-3. In addition, the inspectors noted some examples where these procedures were followed; however, licensee management expectations or procedure guidance were not clearly defined. For example, CWPI-NSP-TQ 2-3 did not define or provide specific guidance for the phrase “when practical.” The lack of specific guidance resulted in:

- i. Compliance with Some Operation Department Policies Not Evaluated: Trainees were evaluated on core work practices such as self-checking, procedural compliance, and communications; however, the trainees were not required to demonstrate proficiency in some operation department policies while performing associated training tasks. For example, in one case, a trainee was discouraged from using a “T-sheet” during a TPE.

(The T-sheet was a tool to track valve manipulations.) Also, trainees were not required to simulate making log-book entries when performing a TPE task. Although the TPE performance was not completely realistic in these instances, these examples did not result in unsatisfactory training.

- ii. Questionable Approaches to OJT/TPE/JPM Process: For example, CWPI-NSP-TQ 2-3 did not prohibit an individual from conducting an OJT and TPE on the same task for a trainee nor did it require OJT and TPE be performed on different days. Although these practices occurred in less than one percent of the activities, the EAs interviewed discussed some instances where TPEs and OJTs were observed by the same individual or on the same day for production or convenience purposes. The EAs were concerned that allowing one individual to assume the role of a trainer and evaluator for a single task impacted the effectiveness of training, in that, the trainee was exposed to one individual's method of performing the task instead of having two independent opportunities. In addition, the EAs commented that performing OJT and TPE activities on the same day tested their short-term memory and did not evaluate their understanding or long-term retention of the training material.

Also, sometime in the Fall of 1999, the NLO Group Training Lead and the Shift Operations Superintendent told the EAs that it was acceptable to perform OJT/TPE without attending classroom instruction on the system since CWPI-NSP-TQ 2-3 does not prohibit this practice. As a result of PIF B199904392 (which questioned this policy), the licensee re-evaluated this practice and determined that general system training was necessary prior to using procedures on the system. The licensee suspended the practice. The inspectors noted that CWPI-NSP-TQ 2-3 had not been revised to incorporate this suspension.

Lastly, nuclear oversight personnel identified that a trainee performed JPMs without completing all of the OJTs and TPEs. The licensee used JPMs in the final certification process and considered JPMs as part of a trainee's final examination. At the time of discovery, licensee management reviewed the circumstances and concluded that it was acceptable for the trainee to perform the JPMs since the outstanding OJTs and TPEs were on unrelated systems. Again, CWPI-NSP-TQ 2-3 did not specifically prohibit this practice.

- Minimal Management Involvement in Field Observations: During a corporate-sponsored self-assessment of the migration program in May 1999, the licensee identified that line management observations of the training program did not meet the licensee's expectations and recommended additional oversight. In January 2000, nuclear oversight personnel identified a continued lack of involvement of operations and training line management in the oversight of the training program, specifically, observations of OJTs and TPEs. In addition, the licensee identified that the quality of observations which had been completed did not meet expectations.

- Lack of Licensee Focus on EO Re-training Process: During the interviews, many of the trainees expressed concern that some of the EOs had not performed EA duties for more than eight years. In a subsequent interview, training management personnel described the EO retraining program as defined in the “Migration Plan - NGG Non-Licensed Operator Initial Training Program Description.” The retraining consisted of classroom instruction and self-study through the completion of the “EA Reclamation Guide.” On February 16, 2000, the licensee informed the inspectors that licensee management did not monitor the progress of the self-study program and as a result, progress towards completion did not appear to meet licensee management’s expectations. At the end of this inspection period, the licensee was evaluating whether completion of the guide was necessary prior to the March 31, 2000 migration program completion date.

c. Conclusions

In general, the new non-licensed operator training program met the requirements of 10 CFR 50.120 in the areas reviewed; and in the opinion of those interviewed, would produce qualified individuals to perform the assigned tasks. However, because the training had not been completed and the individuals had not performed their new duties, the overall effectiveness of the new training program could not be evaluated at this time. The new program was less performance-based than the previous program; however, the classroom instruction was equivalent. Some deficiencies in the program implementation such as unclear expectations were identified. For example, operations and training management personnel involvement in observing OJTs and TPEs was minimal. In addition, the licensee did not provide sufficient oversight of the EOs re-training on EA tasks, in that, the completion of the qualification guidebooks did not appear to be meeting licensee management expectations.

07 Quality Assurance in Operations

07.1 Nuclear Oversight Reviews and Self-Assessments of the Migration Training Program

a. Inspection Scope (71707)

The inspectors interviewed Nuclear Oversight and management personnel to assess their involvement in the migration and reclamation training program for the non-licensed operators. The following documents were also reviewed:

- PIF B199903613, “EA to EO Upgrade Training Program Deficiencies”
- PIF B200000161, ‘NLO TPE Practices”
- PIF B200000213, “Operations Line Management Oversight of NLO OJT/TPE”
- PIF B200000350, “NLO JPM Deficiencies”

- Corporate-sponsored NLO EO/EA Migration Self-Assessment conducted in May 1999
- Byron Operations Department Focus Area Self Assessment of the Non-Licensed Operator Migration Training Program dated February 15, 2000.

b. Observations and Findings

The inspectors noted that the Nuclear Oversight organization initiated several reviews of the migration training program. Nuclear Oversight personnel provided insightful, thorough, and critical observations of the training process. The inspectors noted that the findings documented in PIF B199903613, "EA to EO Upgrade Training Program Deficiencies," dated October 18, 1999, were similar to those identified during this inspection. The Nuclear Oversight organization observed the conduct of OJTs, TPEs and JPMs in January 2000 and identified examples where the conduct of OJTs and TPEs did not meet CWPI-NSP-TQ 2-3 guidance. For example, during a TPE, an Nuclear Oversight inspector observed that the evaluators were giving more information in the cues than that requested by the trainees. In addition, as discussed in Section O5.1, in January 2000, Nuclear Oversight personnel identified that operations line management had observed a very small percentage of the OJT/TPE activities and the quality of their observations were not self-critical of the program and lacked substance.

The licensee initiated several corrective actions in response to the Nuclear Oversight findings. For example, Nuclear Oversight personnel identified that some OJTs were conducted as a group and that individual trainees were not afforded the opportunity to practice the OJT task. The licensee temporarily halted that practice until additional guidance was provided to the trainers. The expectation that all trainees were to practice the tasks during OJT was reinforced prior to re-establishing the group OJT practice. To address the concerns regarding the conduct of TPEs, the licensee developed a summary sheet of the findings and conducted one-on-one discussions with each of the evaluators.

The inspectors noted that the Corporate-sponsored self-assessment conducted in May 1999 concluded that the program met the criteria of 10 CFR 50.120. No deficiencies were identified; however, the licensee identified that line management observations of the program had not been conducted by the Operations Training Superintendent and NLO Group Lead. The self-assessment conducted by the operations department performed in parallel to this inspection effort, concluded that the new program met the requirements of 10 CFR 50.120. The proposed corrective actions to deficiencies noted during this self-assessment effort were not finalized; therefore, were not evaluated by the inspectors.

c. Conclusions

The Nuclear Oversight organization provided thorough, insightful, and critical reviews of the migration training program. Concerns with respect to the conduct of OJTs, TPEs, and JPMs were identified. The licensee's corrective actions to address these concerns

were acceptable. The corporate-sponsored and operations department self-assessment concluded that the migration program met the requirements of 10 CFR 50.120.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on February 16, 2000, and during a follow-up meeting on March 2, 2000. The licensee acknowledged the findings presented.

The licensee did not identify any information discussed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

B. Adams, Regulatory Assurance Manager
N. Barfknecht, Non-Licensed Operator
R. Colglazier, NRC Coordinator
M. Denniston, Field Supervisor
C. Dieckmann, NGG Operations Training Superintendent
D. Henry, Nuclear Oversight
T. Horan, Operator Licensing Supervisor
W. Levis, Site Vice President
R. Lopriore, Site Manager
D. McDermont, Shift Operations Supervisor
D. Popkins, Operations Staff
R. Roton, Nuclear Oversight Assessment Manager
P. Schultz, Non-licensed Operator
M. Snow, Operations Manager
D. Spoerry, Training Manager
J. Tinmans, Non-licensed Operator

NRC

B. Kemker, Resident Inspector

INSPECTION PROCEDURES USED

IP 71707: Plant Operations

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
EA	Equipment Attendant
EO	Equipment Operator
JPM	Job Performance Measure
OJT	On-the-Job Training
TPE	Task Performance Evaluation
PIF	Problem Identification Form
HVS	High Voltage System
NLO	Non-Licensed Operator

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. NRC acceptance of the documents or any portion thereof is not implied.

Problem Identification Forms

PIF B199900506, "NLO Training Atmosphere"
PIF B199900613, "NLO Training Migration"
PIF B199900659, "Another Training PIF"
PIF B199900981, "Lack of Adequate Training for NLO Upgrade Program"
PIF B199901019, "NLO Training Prerequisites Not Met"
PIF B199901804, "Training With No Time on the Job"
PIF B199902828, "Common Knowledge Deficiency Displayed on "A" Man Migration Training"
PIF B199902895, "EO Upgrade Training"
PIF B199903613, "EA to EO Upgrade Training Program Deficiencies"
PIF B199904258, "OJT/TPE Process"
PIF B199904312, "EO/EA Upgrade Knowledge Deficiencies"
PIF B199904313, "Training Certification Guide"
PIF B199904314, "Quality Training?"
PIF B199904376, "Lack of Attention to Detail"
PIF B199904392, "Disregarding Rules and Past Practice"
PIF B199904494, "Delivery of Inaccurate Training"
PIF B199904616, "Inadequate Procedure Compliance"
PIF B200000133, "Training - Quality vs Quantity"
PIF B200000161, "NLO TPE Practices"
PIF B200000213, "Operations Line Management Oversight of NLO OJT/TPE"
PIF B200000350, "NLO JPM Deficiencies"

Assessments:

Lessons Learned for the Performance of OJT, TPE, and JPMs (no date, provided on February 16, 2000.

Byron Operations Department Focus Area Self-Assessment of the Non-Licensed Operator Migration Training Program dated February 15, 2000.

Nuclear Oversight October 1999 Corrective Action Program and Assessment Report.

(Corporate) Training Self-Assessment Final Report

Training Material

Selected review of lesson plans directed at requalifying EO on EA activities.

Job Analysis forms dated January 6 and 18, 2000, which documented justification for changes to the NLO training manual.

EA Reclamation Guide

NLO-B Certification Guide for Migration

Module 99-OJT/E, Revision 0, "99 OJT/TPE Refresher Training"

November 1, 1999, Revision 1, document to Non-Licensed Operators and Shift Management from D. Popkins, describing OJT/TPE guidance.

Day of the Week Agenda for February 16, 2000, which documented metrics for the training program.

Procedures

Migration Plan - NGG Non-Licensed Operator Initial Training Program Description

CWPI-NSP-TQ 1-22, Revision 0, "Non-Licensed Operator Migration Training Program"

CWPI-NSP-TQ 2-3, Revision 0, "On-the-Job and Task Performance Evaluation"

Company Instruction No. 80-1, effective date of January 5, 2000.