



December 1, 1997

United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

ATTN: Document Control Desk

SUBJECT: Licensed Operator Examination Security  
Braidwood Nuclear Power Station, Units 1 and 2  
Byron Nuclear Power Station, Units 1 and 2  
Dresden Nuclear Power Station, Units 2 and 3  
LaSalle County Nuclear Power Station, Units 1 and 2  
Quad Cities Nuclear Power Station, Units 1 and 2  
Zion Nuclear Power Station, Units 1 and 2  
NRC Docket Nos., 50-456 and 50-547 ✓  
NRC Docket Nos., 50-454 and 50-545 ✓  
NRC Docket Nos., 50-237 and 50-249 ✓  
NRC Docket Nos., 50-373 and 50-374 ✓  
NRC Docket Nos., 50-254 and 50-265  
NRC Docket Nos., 50-295 and 50-304

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REFERENCE: (a) Letter to D. Sager (ComEd) from J.A. Grobe (USNRC-RIII); dated November 10, 1997, re: Examination Security

In reference (a), the Nuclear Regulatory Commission (NRC) Region III requested Commonwealth Edison Company (ComEd) to respond to six items pertaining to licensed operator examination security. A detailed response to each of the items is provided in the attachment to this letter.

ComEd recognizes and accepts its responsibility for all aspects of examination security and fully understands the importance of maintaining examination security. ComEd has a common Corporate Examination Security Policy, conducts management oversight of the examination process, has trained personnel on examination security, and has established examination security measures at all six nuclear sites. As a result, we feel we are prepared to take on the increased challenge of examination preparation proposed by the impending NRC rule change.

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Please direct any questions or comments that you might have with regard to this matter to this office.



David A. Sager  
Generation Support Vice President

Attachment

cc: Regional Administrator, NRC - RIII  
J.A. Grobe, NRC RIII  
M. Leach, NRC RIII  
Director, Project Directorate III-2, NRC - NRR  
Braidwood Project Manager, NRC - NRR  
Byron Project Manager, NRC - NRR  
LaSalle Project Manager, NRC - NRR  
Dresden Project Manager, NRC - NRR  
Quad Cities Project Manager, NRC - NRR  
Zion Project Manager, NRC - NRR  
Senior Resident Inspector, NRC - Braidwood  
Senior Resident Inspector, NRC - Byron  
Senior Resident Inspector, NRC - Dresden  
Senior Resident Inspector, NRC - LaSalle County  
Senior Resident Inspector, NRC - Quad Cities  
Senior Resident Inspector, NRC - Zion  
Office of Nuclear Facility Safety - IDNS

## ATTACHMENT

### **Items 1 and 2:**

*"(1) a description of the security procedure changes you put in place at each site following the problem at Dresden, including specifics of how these apply to initial license training and license operator requalification training;"*

*"(2) a description of any later changes you made to examination security procedures following the Byron and LaSalle examinations;"*

### Response

In June 1996, an NRC written initial license examination's integrity was violated at Dresden Station. At the time of the event Dresden Station had limited examination security controls in place. This examination was developed by the NRC under the provisions of NUREG-1021 (Revision 7) and was not a part of the NRC initial license examination pilot process. This violation of examination integrity was the purposeful act of individual(s) who sought to obtain information about a pending examination. Members of Dresden Station's Operations Training Department discovered the loss of examination integrity and promptly reported this to the NRC. Subsequent to the Dresden event some ComEd stations implemented improved versions of their examination security procedures; however, more significant changes have now been made at all of ComEd's nuclear stations, which supersede any changes made at that time. Additionally, ComEd management personnel conducted an assessment of the licensed operator training program integrity at Dresden Station in July 1996. The results of this assessment are discussed under the response to Item 3.

ComEd's LaSalle Station was the first site in the nation to conduct an examination using the NRC initial license examination pilot process in October 1995. Subsequently, initial license examinations were also conducted using the pilot examination process at Zion Station in January 1996 and Braidwood Station in April 1996.

In July 1996, Byron Station was developing a license examination for their October 1996 initial license examination using the NRC initial license examination pilot process when a potential loss of exam security was identified. Over a weekend, the examination material for Byron Station was locked in a file cabinet; however, the door to this room was closed but not locked. A key to the file cabinet was hidden in a separate place in the room. This configuration created the potential for a loss of examination security. The potential loss of examination security was identified by Byron's Training Department and the NRC was promptly notified. No evidence existed that there was any compromise of the examination material. After reviewing the event with NRC representatives, Byron Station revised all the potentially compromised examination material. The Byron event, in conjunction with the earlier Dresden event, indicated that a more substantive examination security process was required. Therefore, a Nuclear Operating Division (NOD) Examination Security Policy was written for implementation at all ComEd nuclear stations.

This new comprehensive security policy covers all aspects of examination security during the development and administration of the initial licensed operator and annual requalification examinations. The NOD Examination Security Policy was drafted, reviewed, and approved by all six Site Training Managers acting as the Nuclear Training Team (NTT). The major elements of this policy include:

- Defining what constitutes an exam, exam control, physical barriers, and authorized personnel.
- Stating that disciplinary action may be taken for violating the examination security policy or procedure.
- Describing the physical controls for NRC initial and requalification exams; specifying two independent barriers shall exist whenever license examination material must be controlled. This will preclude the loss of examination material control if one barrier is lost. Additionally, both barriers must be lockable.
- Specifying key control for barrier locks. Any keys used for locking the independent barriers shall not be kept on the same key ring and must be under the control of someone who has signed the examination security agreement.
- Specifying control of the electronic form of the examination materials. A dedicated printer is to be used, examination files need to be password protected, and stored on media that is not readily accessible to the network.

- Delineating that examination control during reproduction will be under the control of someone who has signed the examination security agreement.
- Specifying that individuals administering or proctoring the examination are required to sign the examination security agreement.
- Stipulating that all appropriate personnel must sign and concur with the examination security agreement and terms associated with it.
- Outlining that the NRC examination development room should also include a dedicated printer, copier, and paper shredder. Additionally, all printing or copying of examination material should be done on uniquely colored paper. This allows for easy identification of material which must be secured prior to leaving an area where examination material is being used.
- Identifying simulator specific security requirements. The actions ensure that the simulator will not indicate any examination specific information. Some of these items include turning all printers off, disconnecting the "bridge" network to separate the simulator from external connections, and clearing the simulators "Backtrack" log.
- Stating that in-plant Job Performance Measures (JPM) security requirements include: verifying that all initial license candidates will not be able to observe validation of the in-plant JPMs, ensuring all personnel involved are on the security agreement, all examination material shall remain in the possession of personnel on the examination security agreement, and personnel will spend time in the plant at additional locations not related to the JPM examination.

Following the Byron event, the NRC conducted inspections of the licensed operator annual requalification examinations at Quad Cities and Byron Stations in the third and fourth quarters of 1996. There were no identified weaknesses related to examination security from either of these examinations.

In October 1996, Quad Cities Station conducted an initial license examination using the NRC initial license examination pilot process. A potential violation of Quad Cities' examination security procedure was identified by the training department and the NRC was immediately informed of the event. A Simulator Hardware Maintenance Technician had signed the examination security agreement but then was never involved in any of the exam preparation. Subsequently, this Technician was the simulator operator during initial licensed operator training. The technician had no knowledge of the examination content and had no direct contact with the trainees. However, the technicians involvement created the appearance that the examination was compromised. A root cause investigation of the event was conducted. The corrective actions taken by Quad Cities Station included the following:

- Revising the station examination security procedure to limit certain activities of individuals on the security agreement.
- Understanding the importance of what an individual's responsibilities are when signing an examination security agreement. This was discussed during station annual retraining with employees at Quad Cities Station.
- Counseling and disciplining the individuals involved.

LaSalle Station conducted an initial licensed operator examination using the NRC initial license examination pilot process in December 1996 and a NRC developed initial license examination in April 1997. No examination security weaknesses were identified during the December 1996 examination. During the April 1997 initial license examination, ComEd identified that there were three issues related to examination security.

1. An instructor who had not signed the examination security agreement entered the area where an initial licensed operator examination was being duplicated.
2. The examination review committee identified three missing pages from a copy of a written examination.
3. A candidate for the same examination noticed a number of plant procedures that had been checked out by individuals reviewing the examination. He later brought this to the attention of the Training Department.

All these events were identified by the training department and immediately reported to the NRC. The corrective actions taken because of this event include:

- Revising the station examination security procedure to correct the identified weaknesses.
- Replacing the five questions that were potentially compromised.
- Counseling and disciplining the individuals involved.

Since the LaSalle Station event in April 1997, licensed operator annual requalification examinations have been conducted at LaSalle, Byron, and Braidwood Stations. Additionally, Braidwood Station conducted initial licensed operator examinations using the NRC initial license examination NUREG-1021 [Interim] (Revision 8) process. There were no identified weaknesses related to examination security from any of these examinations.

Following the LaSalle 1997 exams, notification was sent to all stations to eliminate two items from their security procedures based on NRC review. These items concerned operating the simulator for training and conducting performance mode evaluations of candidates. This was recommended by the NRC to clarify the roles which the simulator operator and evaluators can play. These changes are reflected in the new NOD exam security procedure (NSP-TQ 3001), which will replace the existing NOD Examination Security Policy following completion of station reviews.

**Item 3:**

*"the results of any assessment site personnel or corporate personnel have performed of the adequacy of examination security;"*

**Response**

Four examination security assessments were performed in the time period of July 1996 through November 1997.

Dresden Station performed an independent assessment of licensed operator training program integrity in July 1996. The purpose was to assess the integrity of the training program and the personnel involved. The assessment team was composed of ComEd personnel representing corporate training, LaSalle and Quad Cities training, the Independent Safety and Engineering Group, and the Quality First Organization. The team was supported by ComEd's corporate security and the LaSalle Site Quality Verification departments. The primary conclusion was that the operator examination process was sound and it was not believed that the examination process had been compromised beyond the specific event. Two additional conclusions from the report are: opportunities exist for improving the examination security process and some of the licensed operators were unclear about management's expectations for reporting others who compromise the examination security process. The team also supplied recommendations with their conclusions. These recommendations have been evaluated and appropriately incorporated into the station's training policy.

Byron Station performed an assessment of examination physical security in August 1996 to determine the root cause for the examination preparation room being left unlocked for two days. The assessment concluded that the examination was not compromised. Corrective action taken as a result of the investigation included changing the door lock to one that automatically locks on closure, the drafting of the NOD Examination Security Policy, improved key control, and computer configuration changes to ensure that any printouts go to only the printers in the examination room. Finally, ComEd rewrote the examination to ensure confidence in the examination process.

Braidwood Station internally performed a requalification examination security assessment in June 1997. This was an unannounced inspection of the annual written and static simulator examinations conducted as part of a larger comprehensive assessment of licensed operator training. The assessment resulted in recommendations to clarify several points in the security procedure by specifying the use of colored paper for exams and incorporating the requirements to use a security agreement.

Dresden Station's Quality and Safety Assessment Department performed a Field Monitoring Report at Dresden Station during the first week of November 1997. The assessment's purpose was to address the adequacy of the examination security at Dresden Station. A Problem Identification Form (PIF) was written because some information in the examination security procedure was not transferred between procedure revisions. The final report has not yet been released.

NOD corporate training staff routinely assesses examination security while supporting individual station examinations. Lessons learned from these observations are shared at the ComEd Operations Training

Superintendent meetings. Additionally, lessons learned about the examination process are discussed at the Region III Operations Training meetings that are held quarterly.

**Item 4:**

*"a description of the corrective actions taken to assure that you have bounded the security problem at Dresden;"*

**Response**

The NOD Examination Security Policy has been put in place to reduce the opportunity for examination compromise. This policy provides assurance that no unauthorized personnel have access to examination materials. Examples of controls to prevent intentional or inadvertent examination security compromises are listed below:

- Responsibilities and requirements for those individuals on the security agreement have been clarified.
- A dedicated examination preparation room with two independent barriers has been established.
- Dedicated computers and printers are used in the examination preparation room.
- Uniquely colored or marked paper is used for examinations to ensure that examination material is easily recognized.
- Administrative controls on simulator activities during examination development and validation have been implemented. Controls include the use of locked doors and checklists to help prevent inadvertent examination compromise.

As discussed in detail in the responses to Items 1 and 2 (above), the NOD Examination Security Policy was drafted, reviewed and approved by the NTT.

The Corporate training staff coordinates the development of initial license examinations independent of the site training organizations. Initial license examinations are developed by vendors external to the ComEd training organizations and the vendors' contracts include provisions to follow ComEd's examination security considerations. The initial license examinations are developed off-site to the maximum extent practicable. Examination materials developed off ComEd property are delivered on password protected disks and are in clearly marked, triple wrapped envelopes. Requalification examinations are developed under the NOD Examination Security Policy. By implementing the Examination Security Policy and taking additional corrective actions as described elsewhere throughout this document, we have enhanced physical barriers, processes, and controls since the Dresden event. These items will limit the ability of any individuals trying to compromise an examination.

The Corporate training staff also routinely assess examination security while supporting individual site examinations. This practice provides a corporate overview and encourages the transfer of best practices from one site to another.

For the reasons discussed above the corrective actions described in this letter provide reasonable assurance that the exam security incident at Dresden, as well as the other events described herein, will not recur.

**Item 5:**

*"your views, and supporting basis, on any possible ramifications of the examination security issues on plant operations;"*

**Response**

ComEd takes examination security very seriously. The incident at Dresden Station in June 1996 was an isolated occurrence where individual(s) took actions to circumvent the examination security measures in place at that time. ComEd conducted its own internal investigation into the event and rigorously supported the investigation of this event by the NRC. ComEd took appropriate personnel actions. As described in response to Item 3, ComEd also conducted an independent assessment of the licensed operator training program in response to this event.

In the cases of actual or potential examination compromise described ComEd identified the weaknesses in our security methods, promptly reported them to the NRC, and took conservative actions. Appropriate sections of the

examinations were rewritten. This ensured that the examinations were secure and uncompromised and that all licensed operators were qualified with a valid examination. These issues did not impact the plant operations.

**Item 6**

*"your plans, if any, for additional changes to your examination security procedures pending preparation of your own examination materials."*

**Response**

ComEd has adopted technically sound security policies and procedures for licensed operator examinations. ComEd has participated in the NRC initial license examination pilot process and has taken corrective actions to ensure that exam security has been enhanced. The NOD Examination Security Policy is under revision to incorporate further enhancements and will be issued as a Division-wide Nuclear Station Procedure (NSP TQ-3001), for implementation at all ComEd nuclear sites. Lessons learned from the LaSalle examination have been incorporated into the LaSalle Examination Security Procedure and will be considered for inclusion in the corporate policy.