

April 6, 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 SECURITY INSPECTION REPORT 50-454/2000005(DRS);
50-455/2000005(DRS)

Dear Mr. Kingsley:

On March 17, 2000, the NRC completed an inspection at your Byron Nuclear Generating Plant Reactor facility. The enclosed report presents the results of that inspection.

Areas examined within your security program are identified in the report. Within those areas, the inspection consisted of a selective examination of procedures and representative records, observation of performance, and interviews with staff. The objective of the inspection effort was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements.

Based on the results of this inspection, no violations of NRC requirements were identified. The security program was effectively implemented. Personnel involved with this program were knowledgeable regarding alarm station operations and ingress search processes. A significant improvement in security equipment maintenance support was noted.

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 by J. Grobe Acting For/

James R. Creed
Safeguards Program Manager

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

Enclosure: Inspection Report 50-454/2000005(DRS);
50-455/2000005(DRS)

See Attached Distribution

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State Liaison Officer
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REGION III

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

Report No: 50-454/2000005(DRS); 50-455/2000005

Licensee: Commonwealth Edison Company (ComEd)

Facility: Byron Generating Station, Units 1 and 2

Location: 4450 North German Church Road
Byron, IL 61010

Dates: March 13-17, 2000

Inspector: J. Belanger, Senior Physical Security Inspector

Approved by: James R. Creed, Safeguards Program Manager
Division of Reactor Safety

EXECUTIVE SUMMARY

Byron Generating Station, Units 1 and 2
NRC Inspection Report 50-454/2000005(DRS); 50-455/2000005

This inspection reviewed the physical security system, an aspect of Plant Support. The inspector evaluated alarm station operations, protected area access controls (personnel/material/vehicles), the maintenance program for security equipment, personnel search equipment, security plan changes under 10 CFR 50.54(p), security event logs, security staffing levels, quality assurance in security and safeguards activities, and a follow-up on previous inspection findings. This was an announced inspection conducted by a regional inspector.

- Central and Secondary alarm station operator personnel effectively monitored and operated all phases of the alarm system to include intrusion detection and assessment, directing the response force, and operating communications equipment. Each alarm station had independent and redundant means of annunciating and assessing alarms. The alarm stations did not contain any operational activities that would interfere with the execution of the detection, assessment, and response functions (Section S1.1).
- Protected area access controls for personnel, materials and packages, and vehicles, were effectively implemented. Observed searches in the main access control facility, vehicle search area, and warehouse were thorough (Section S1.2).
- Increased management oversight and improved work practices significantly reduced compensatory measures required for security equipment (Section S2.1).
- All personnel search equipment requested to be demonstrated was verified operable in accordance with security plan commitments and testing procedures (Section S2.2).
- Changes (Revision 53) to the licensee's security plan, as actually implemented, did not decrease the effectiveness of the plan and were reported in accordance with NRC requirements in 10 CFR 50.54(p) (Section S3.1).

Report Details

IV. Plant Support

S1 Conduct of Security and Safeguards Activities

S1.1 Alarm Station Operations

a. Inspection Scope (81700)

The inspector observed operations of the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) to evaluate the effectiveness of alarm, surveillance, and communications capabilities.

b. Observations and Findings

The inspector determined through observation and interviews with console operators, that each alarm station had independent and redundant capabilities of annunciating and assessing alarms. Both stations were continuously manned and contained no operational activities that would interfere with the execution of the detection, assessment, and response functions. The inspector observed that security equipment at both stations was operable and effective. Some CCTV equipment had open work requests relating to intermittent camera or monitor problems; however, at the time of the inspection, all equipment required by the security plan worked properly.

The inspector determined through observation and interviews that no single act could remove a station's capability of detecting a threat and calling for assistance. Alarm station operators observed by the inspector were highly experienced and performed their duties in a professional manner. The inspector observed operators properly assess alarms, direct response force members, and utilize communications equipment on several occasions during the inspection.

c. Conclusions

Central and Secondary alarm station operator personnel effectively monitored and operated all phases of the alarm system to include intrusion detection and assessment, directing the response force, and operating communications equipment. Each alarm station had independent and redundant means of annunciating and assessing alarms. The alarm stations did not contain any operational activities that would interfere with the execution of the detection, assessment, and response functions.

S1.2 Protected Area Access Control (Personnel/Packages and Material/Vehicles)

a. Inspection Scope (81700)

The inspector reviewed the licensee's personnel, package/material, and vehicle search activities to determine if the licensee had positive controls in place to ensure that only authorized personnel, packages, etc. were permitted entry into the protected area.

b. Observations and Findings

The inspector observed personnel and package search activities in the access control building during high traffic ingress periods on two days of the inspection. Security force personnel adequately monitored protected area ingress search activities, assuring that all entering personnel and hand-carried items underwent equipment search and conducting follow-up searches if personnel alarmed detection equipment or hands-on search if the image on the x-ray was indiscernible. The search process was performed in a professional manner.

The inspector also observed a security force member conduct searches of two designated vehicles entering the protected area through the main vehicle gate. The searched areas of the vehicles included the engine compartment, undercarriage, cargo areas, and cab. The vehicle searches were thorough and professional.

The inspector observed trained and qualified warehouse personnel conduct searches of two deliveries of plant equipment through the warehouse. The execution of the overall search process was conducted in accordance with established security procedures and were thorough and professional.

In all of the searches conducted, the processes were done in accordance with established procedures. No prohibited items were found in the searches conducted.

c. Conclusions

Protected area access controls for personnel, materials, packages, and vehicles were effectively implemented. Observed searches in the main access control facility, vehicle search area, and warehouse were thorough.

S2 Status of Security Facilities and Equipment

S2.1 Maintenance Support for Security Equipment

a. Inspection Scope (81700)

The inspector reviewed the maintenance support for security equipment. This included a review of pending security related work requests, problem identification forms, compensatory hour reports for the perimeter and camera monitors, and the station procedure for processing work requests.

b. Observations and Findings

A review of the licensee's program for monitoring compensatory hours for security equipment revealed that there were almost 2100 compensatory hours for security equipment in 1999, 1400 of which occurred during the first half of the year. The licensee conducted a root cause investigation of excessive compensatory hours. This analysis identified that Byron Station had historically considered that compensating for failed security equipment was an acceptable work practice because using compensatory

measures to replace failed security equipment did not violate regulatory or security plan requirements. This practice supported a philosophy that as long as there was no violation and minimal costs resulting from the compensatory measures, security equipment would not require immediate evaluation, repair, or replacement. The licensee identified that this philosophy perpetuated poor maintenance efforts and created an atmosphere where security equipment problems were prevalent.

Discussions with the Security Administrator indicated that several changes were made to improve the status of security equipment at Byron Station to include:

- Commencing the third quarter of 1999, two electrical maintenance workers were dedicated to work on security equipment.
- Twelve new cameras were installed to replace cameras showing signs of degradations.
- The station procedure for assigning priority of work requests (WC-AA-101) was revised to assign a higher priority (B1) to work requests that affect the security equipment performance indicator.
- The Assistant Security Administrator met with the electrical maintenance staff a minimum of twice a week to set priorities and assure security organizational support of the repairs that were needed.
- Security Shift Supervisors were instructed by security management to call the Site Security Administrator/Shift Manager as needed on back shifts and weekends if there were maintenance problems with cameras and perimeter alarms that were causing compensatory measures, and an evaluation would be made as to whether a call out of maintenance personnel was warranted.
- Security management reported daily in the Station's Plan of the Day (POD) meeting on compensatory measures required due to protected area equipment being out of service.

c. Conclusions

Increased management oversight and improved work practices significantly reduced compensatory measures required for security equipment.

S2.2 Personnel Search Equipment

a. Inspection Scope (81700)

The inspector reviewed the licensee's testing program for personnel search equipment. Specifically, the inspector reviewed the testing procedures for the portal firearms detector, explosive detector, and x-ray and requested that the licensee demonstrate the effectiveness of their search equipment using these procedures.

b. Observations and Findings

The inspector reviewed the following testing procedures:

- Portal Firearms Detector Operational/Performance Test
- Explosive Detector Operational Test
- Explosive Detector Performance Test
- X-Ray Operation/Performance Test

The inspector found that these testing procedures adequately addressed frequency, test standards, and testing sequence, and documentation. The inspector requested that the licensee demonstrate the effectiveness of their in-service search equipment utilizing the referenced test procedures. The tests were performed by a member of the security staff. All tests were properly conducted. The test standards were met on every test performed.

Testing was not performed on two of four firearms detectors in the access control building because the equipment had been declared inoperable. The licensee demonstrated during peak ingress traffic periods that they could successfully process the current badged population with these two detectors; however, if one of these two remaining operable detectors should fail, there is the potential that significant protected area ingress delays would occur. At the time of this inspection, the licensee's technical maintenance staff was trying to determine the cause of the problems relating to the two out-of-service firearms detectors.

c. Conclusions

In-service personnel search equipment tested in accordance with established procedures was found to be effective. Two of four firearms detectors were out of service and the licensee was attempting to identify the problem.

S3 Security and Safeguards Procedures and Documentation

S3.1 Security Plan Changes

a. Inspection Scope (81700)

The inspector reviewed a 10 CFR 50.54(p) security plan change (Revision 53) submitted by the licensee by letter dated December 8, 1999. The inspector's review was to determine if the submitted changes did not decrease the effectiveness of the security plan. Inspection activities included an interview with the Supervisor, Nuclear Security Operations.

b. Observations and Findings

Revision 53 to the Byron Station Security Plan and Training and Qualification Plan reflected a reduction in the number of armed responders based on the licensee's revised protective strategy that was demonstrated to the NRC in November 1998

through tabletop exercises and drills. The NRC had concluded that the revised protective strategy was fundamentally sound and effective in protecting Byron Station against the NRC's design basis threat.

Subsequent to the implementation of this revised protective strategy that relocated responders to strategic defensive positions, the licensee revised their compensatory measures pertaining to the perimeter intrusion detection system to utilize these responders.

The licensee's revised protective strategy resulted in the determination that a different type of contingency weapon would be more effective. The security plan was changed to reflect the change in contingency weapons and a change in the qualification course to correspond to the new weapon. The effectiveness of the new contingency weapon was demonstrated during the tabletop exercises and drills during the regional assist inspection in November 1998.

As permitted by previous changes to 10 CFR 73.55, the licensee changed the frequency of review of the vital area access list from every 31 days to quarterly, and deleted the requirement to change keys, locks, and combinations every twelve months. The plan was revised to require a change of these devices if there is evidence or suspicion that the device may have been compromised.

c. Conclusions

Changes (Revision 53) to the licensee's security plan, as actually implemented, did not decrease the effectiveness of the plan and were reported in accordance with NRC requirements in 10 CFR 50.54(p).

S7 Quality Assurance in Security and Safeguards Activities

S7.1 Quality Assurance in Security Activities

a. Inspection Scope (81700)

The inspector reviewed results of a Nuclear Oversight (N.O.) Assessment of the performance indicator program conducted December 13 through December 28, 1999 at Byron Station. Additionally, the inspector discussed the results of a root cause investigation related to security equipment performance.

b. Observations and Findings

The most recent Nuclear Oversight Assessment of security at Byron related to security equipment performance that was done in preparation for the submittal of performance indicator data. The assessment at Byron Station, December 13 -17, 1999, concluded that the overall collection, coordination, validation, and reporting of PI data for the new NRC oversight process was effective and that personnel were knowledgeable of the process and could readily demonstrate the decision process used for their indicator. Minor issues with the security equipment performance indicator were identified, i.e.,

among the five ComEd stations, there was a lack of consistency in reporting compensatory measures taken for frequent alarm/nuisance alarms that are still functioning as designed, and in reporting compensatory measures for reduced lighting effects on perimeter cameras. The objective evidence for the security performance indicators supported the assessment conclusions.

On March 6, 2000, security management initiated PIF #B2000-00722 to document that security equipment (PIDS/CCTV) performance was weak. Immediate corrective actions included the establishment of a multi-site root cause investigation. The investigation was completed and the report was in draft status at the time of the inspection. The investigation was detailed and self-critical. Discussions with the Station Security Administrator indicated that the investigation identified that inadequate security equipment performance was due to low sensitivity and lack of management oversight, aging equipment, procedural design, resource limitations, and insufficient knowledge of system. PIFs were written to address some of the issues. Projects were underway to improve camera performance, improve ground and insulate equipment (lightning strikes and power spikes) and procuring an adequate spare parts inventory.

c. Conclusions

Self-assessment of the data and processes relating to the performance of security equipment was of sufficient scope and depth to identify deficiencies and areas where improvements were warranted. Corrective actions to identified deficiencies were being effectively developed and implemented by the security staff.

S8 Miscellaneous Security and Safeguards Activities

- S8.1 (Closed) Inspection Follow-Up Item No. 50-454/99014-01; 50-455/99014-01: During the semi-annual surveillance performed on the security diesel in August 1999, the security diesel tripped. The licensee performed a root cause investigation and determined that a ground from a security lighting fixture caused the security diesel to trip. Repairs were made to address this ground problem. However, a similar problem recurred in February 2000, during the semi-annual security diesel surveillance. The licensee's investigation revealed that there were enough grounds that existed on the security lighting system that the trip set point was exceeded when the diesel supplied the bus.

At the time of this inspection, the Electrical Maintenance Department had determined which lights had grounds on them. The lights with the most severe grounds were isolated at the pole. The Electrical Maintenance Department's goal was to have repairs completed by April 14, 2000. Until the repairs were completed, a temp mod was performed on the security diesel trip set point to become an "alarm only" function and the alarm comes in at 80 amps as opposed to tripping the diesel at 30 amps. The security diesel was successfully run on February 20, 2000, with this temp mod in place. This item is closed.

- S8.2 (Closed) Inspection Follow-Up Item No. 50-454/99014-02; 50-455/99014-02: Security staffing levels on backshifts and weekends was challenged when non-routine staff commitments occurred often resulting in temporary cessation of personnel access into

the protected area through the main gatehouse. The licensee was to evaluate alternative compensatory measures for the perimeter intrusion alarm system that would better utilize existing resources.

Inspection showed that this evaluation occurred and the licensee changed their compensatory measures to better utilize existing resources based on the revised protective strategy in regards to compensatory measures for multiple perimeter zone failures. This change in compensatory measures was incorporated in a security plan change (Revision 53). This item is closed.

X1 Exit Meeting Summary

The inspector presented the inspection results to members of the licensee management at the conclusion of the inspection on March 17, 2000. The licensee did not identify any items discussed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- B. Adams, Regulatory Assurance Manager
- G. Bowers, Assistant Station Security Administrator
- D. Combs, Station Security Administrator
- K. Jury, Support Services Director
- S. Kirven, Director, Nuclear Operations, The Wackenhut Corporation (TWC)
- R. Lane, Director of Security (Corporate)
- W. Levis, Site Vice President
- R. Lopriore, Station Manager
- M. Mareth, Security Force Manager, TWC
- D. Martin, Nuclear Oversight Assessment
- D. Minor, Operations Coordinator, TWC
- K. Moser, Regulatory Assurance
- D. Pallansch, Manager, Training and Compliance, TWC
- B. Saunders, Nuclear Security Supervisor, (Corporate)
- G. Stauffer, NRC Coordinator

NRC

- G. Cobey, Senior Resident Inspector
- B. Kemker, Resident Inspector

INSPECTION PROCEDURES USED

- IP 81700: Physical Security Program for Power Reactors
- IP 92904: Follow-up Plant Support

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

- | | | |
|---------------------|-----|-------------------------------------|
| 50-454/455-99014-01 | IFI | Loss of Security Inverter |
| 50-454/455-99014-02 | IFI | Impact of Minimum Security Staffing |

Discussed

None

LIST OF ACRONYMS USED

CAS	Central Alarm Station
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
ComEd	Commonwealth Edison
DRS	Division of Reactor Safety
IFI	Inspection Follow Up Item
NEI	Nuclear Energy Institute
N.O.	Nuclear Oversight
PIDS	Perimeter Intrusion Detection System
PIF	Problem Identification Form
SAS	Secondary Alarm Station
TWC	The Wackenhut Corporation

LIST OF DOCUMENTS REVIEWED

Safeguards Event Log (July 1999 - February 2000)

Compensatory Hour Reports for PIDS and CCTV (January - December 1999) (January - February 2000)

Performance Indicator (PI) Owners Readiness Assessment Progress Report: Physical Protection Cornerstone, dated March 3, 2000

Summary – N.O. Assessment of NEI/NRC PIS

Memorandum dated December 28, 1999, from J. R. Roton to Byron Managers, Superintendents and Department Heads; Subject: Summary of Field Observations for the Period of December 13 through December 28, 1999

Security Department Year 2000 Improvement Initiatives, dated March 1, 2000

Wackenhut Monthly Management Reports for the Month of January and February 2000

Problem Identification Forms (Security Related) July 1999 - March 2000