

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-454/99014(DRS); 50-455/99014(DRS)

Licensee: Commonwealth Edison Company (ComEd)

Facility: Byron Generating Station, Units 1 & 2

Location: 4450 North German Church Road
Byron, IL 61010

Dates: August 23-27, 1999

Inspector: J. Belanger, Senior Physical Security Inspector

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

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EXECUTIVE SUMMARY

Byron Generating Station, Units 1 & 2
NRC Inspection Report 50-454/99014(DRS); 50-455/99014(DRS)

This routine announced inspection of the physical security program included security organization and administration, the security training and qualification program, and protected area access controls for personnel, vehicles, and packages. In addition, several open items from previous inspections were reviewed and closed.

- The security force effectively responded to a loss of some security equipment on August 26, 1999. Compensatory measures were implemented in a timely manner. The licensee's investigation and corrective actions will be evaluated by the NRC and that followup is considered an Inspection Follow Up Item (IFI). (Section S2.1)
- Security force members were knowledgeable of post requirements and performed duties in a professional, effective and competent manner on a consistent basis. (Section S4)
- Overall, the contractor security training staff ensured that security force members were adequately trained and qualified in accordance with Appendix B of the security plan. A review of security loggable events showed consistent, acceptable security force performance. (Section S5)
- Security force staffing during back shifts met the minimum size required by the security plan, and therefore, met regulatory requirements. However, non-routine events, such as the need to implement compensatory measures, resulted in the secession of some fundamental routine activities, such as protected area access. The secession of those activities were done in accordance with procedural requirements. The frequency and extent of these challenges to the system provide the potential for more significant problems. The licensee was evaluating these issues and indicated they planned to submit a security plan change regarding resource utilization. This is an Inspection Follow Up Item. (Section S6.1)

Report Details

IV. Plant Support

S2 Status of Security Facilities and Equipment

S2.1 Failure of Security Related Equipment

a. Inspection Scope (81700)

The inspector reviewed the security organization's response to the loss of some security systems that occurred during a routine surveillance. Interviews were conducted with the shift lieutenant on duty at the time of the incident and the Station Security Administrator. The inspector also reviewed the security incident report and PIF (Problem Identification Form) relating to the event.

b. Observations and Findings

On August 26, 1999, at 10:30 p.m., during performance of a portion of the backup power supply system, a specific component of the backup power supply system failed, causing the loss of the primary power source. This failure should not have occurred during a routine surveillance. A major loss of security systems occurred requiring extensive compensatory measures. At the time of the inspection, the licensee's technical staff did not know why the failure occurred. The condition lasted for twenty-seven minutes until an alternate power source (dirty power) could be installed. The Station Security Administrator stated that the security system could run indefinitely on the "dirty" power source; however, this was not a desirable situation because the configuration could affect reactor operations. Station engineers promptly began an investigation of the incident. The NRC will review the licensee's investigation and corrective actions. This is an Inspection Follow Up Item (IFI 50-454/99014-01; 50-45499014-01).

The inspector's interview with security shift lieutenant at the time of the incident indicated that the shift lieutenant immediately initiated compensatory measures for the lost security components in accordance with security plan requirements. This security shift lieutenant indicated to the NRC inspector that these measures were in place within three minutes following the loss of power. Plant personnel were notified by a page announcement not to open any security doors without a security officer being present. Security personnel were dispatched by radio to positions in the plant and the protected area. After power was restored, the security force conducted tests of all security equipment in accordance with established procedures. On duty security personnel notified offsite security management personnel, the NRC senior resident inspector, and the NRC security inspector. The Station Security Administrator immediately responded to the site and also notified the NRC security inspector at his motel. Shift operations, working with the security organization, evaluated the incident and notified the NRC through the Emergency Notification System (ENS).

c. Conclusions

The security force adequately responded to a loss of security equipment caused by the failure of a component during the semi-annual surveillance of the security power

system. Compensatory measures were implemented in a timely manner. The licensee's investigation concerning the cause and corrective actions is considered an Inspection Follow Up Item. The event was a potential significant risk because the power supply failure resulted in the loss of most security equipment.

S4 Security and Safeguards Staff Knowledge and Performance

a. Inspection Scope (81700)

The inspector toured several security posts and observed performance of duties to determine if the officers were knowledgeable of post requirements. Security event logs and other records pertaining to security force performance were also reviewed.

b. Observations and Findings

Security shift supervisors, observed by the inspector, provided good oversight of activities in progress. Personnel observed on post were very knowledgeable of post responsibilities and functioning of the equipment at the security posts. Alarm station operators were thorough and timely in their monitoring of activities and dispatch of security personnel for various activities.

Security force performance has been at a high level of effectiveness because the inspector's review of loggable security events showed that none of the loggable events since January 1999 were caused by security force members.

c. Conclusions

Security force members were knowledgeable of post requirements and performed duties in a professional, effective and competent manner on a consistent basis.

S5 Security and Safeguards Staff Training and Qualification

a. Inspection Scope (81700)

The inspector reviewed the training and qualification records of ten randomly selected security force personnel. The training records reviewed consisted of initial and annual requalification training. The inspector interviewed the Training Coordinator and one instructor regarding the training program.

b. Observations and Findings

Training records reviewed were well documented and accurate. The inspector confirmed that the Individual Qualification Record (IQR) included the date that the successful performance of a task was complete and the signature of the evaluating supervisor. Copies of test and evaluation materials utilized to demonstrate adequate performance of crucial tasks were also reviewed by the inspector and found to be adequate.

Interviews with the training coordinator and one of two training instructors indicated that the current training program consists of initial and annual requalification to meet the requirements of Appendix B to the security plan. Training on any procedural change is

accomplished through a "read and sign" on post. In addition to the annual firearms requalification, security force members were afforded the opportunity for "open range" times for practice on their own time but with ammunition and a range instructor provided.

The training coordinator indicated the training staff was responsible for the station's force-on-force drill program. (Note: There is no regulatory requirement to conduct such drills as there is no commitment in the security plan for them.) The inspector noted that since the NRC evaluation of the licensee's revised tactical strategy during an inspection in November 1998, no force-on-force drills were conducted until June 1999, a period of seven months. The training staff indicated that they had not had enough extra people to conduct the drills. The reduction in staffing (see Section S6) and twelve hour shifts affected the ability of the training staff to conduct drills under the current methodology for conducting drills, according to the training staff interviewed. The Station Security Administrator indicated that they intend to conduct drills on a regular basis and were evaluating new ways to perform drills with the current security staffing level.

The inspector attended a briefing by the licensee's contractor/consultant who evaluated the Byron Station Defensive Strategy during the force-on-force drills that had been conducted on August 17-19, 1999. The consultant stated that this evaluation, which utilized the NRC Operational Safeguards Response Evaluation (OSRE) Team Criteria, re-validated the defensive strategy. In all drills, the response force team neutralized the adversaries before the target sets could be reached and destroyed. Some concerns involving strategy implementation were provided by the consultant with specific recommendations to include the addition of concealment in specific areas considered vital to successful response deployment into fixed fighting positions. The licensee indicated that they would evaluate these concerns and recommendations.

c. Conclusions

Individual Qualification Records were complete and accurate. The licensee's security training and qualification program was adequate in that it met security plan commitments.

S6 Security Organization and Administration

S6.1 Back Shift and Weekend Security Staffing was Minimal

a. Inspection Scope (81700)

The inspector reviewed current staffing levels to assure that the total number of trained security officers and armed personnel immediately available at the facility to fulfill response requirements and shift manning levels met the numbers specified in the Physical Security Plan. The inspector discussed this issue with security station management and reviewed shift manning rosters.

b. Observations and Findings

The security plan specified the number of armed responders (Safeguards Information) and the total number of security officers per shift required to fulfill security plan commitments. The inspector determined through shift manning logs that those numbers were met. The shift manning level during back shifts and weekends met the

minimum number identified in the security plan. (Note: A significant personnel reduction in the overall security force took occurred during the first quarter of 1999 and changed shift manning levels but not minimum security plan requirements.)

During routine shift activities on back shifts and weekends, minimal security shift staffing was not a problem. However, security supervisors stated that frequently non-routine events occurred which required the use of officers as compensatory measures. In order to staff those compensatory measures, the main access control facility was frequently closed and functions such as personnel, package, and vehicle searches were suspended. Essentially, access to the facility was closed. A computer generated "Command History Report" for the period of June 1, 1999 through August 24, 1999, confirmed that the gatehouse was closed almost daily for periods of five to fifteen minutes to facilitate post rotations and longer when compensatory measures were required. The inspector determined that in no instance was the armed response function affected.

Several security lieutenants, alarm stations operators, and security officers expressed their frustration regarding the effect of the minimal staffing on the back shifts and weekends. The Station Security Administrator advised the inspector that the licensee was evaluating compensatory measures identified in the security plan and possibly changing security plan commitments. The licensee's objective, as stated by the corporate Nuclear Security Director, was to improve utilization of existing resources while continuing to provide effective compensatory measures.

c. Conclusions

The licensee continued to meet their security plan commitments regarding minimum shift manning levels. However, the implemented minimum level affected some routine security functions when non-routine staff commitments were required. The licensee is evaluating alternative compensatory measures that would better utilize existing resources. The issue has the potential for affecting security force performance and is considered an Inspection Follow Up Item (50-454/99014-02; 50-455/99014-02).

S8 Miscellaneous Security and Safeguards Activities

- S8.1 (Closed) IFI 50-454/455-97011-02: Some security related events were documented by incident reports rather than in security event logs. The inspector's review of the loggable events for 1999, 10 CFR 73.71, Regulatory Guide 5.62, and NUREG-1304, showed that the licensee was properly logging their security events in accordance with regulatory guidance. This issue is closed.
- S8.2 (Closed) URI 50-454/455-98003-02: Some alarm zones were placed back into service from an inoperative state. A test was not performed before taking the zones out of service and only a single alarm test which did not include tamper and line supervision testing when the zone was returned to service.

NRC determined that this testing was not adequate and the licensee was so advised. The licensee changed their testing procedure requires full testing prior to placing the zone back in service anytime a zone is failed due to no alarm. This issue is closed.

- S8.3 (Closed) URI 50-454/455-03-01: The unresolved item was whether a security officer with a contingency weapon compensate for a degraded vehicle barrier system for more than 72 hours. NRC determined that this was acceptable and the licensee was so advised by written correspondence. This issue is closed.
- S8.4 (Closed) IFI 50-454/455-980916-02: This follow up item involved whether the June 1998, support staff reduction and security reorganization affected security force performance. A review of security loggable events for 1999 indicated that the reorganization did not affect performance. However, interviews with the Station Security Administrator indicated that the reorganization limited their ability for program analysis and self-assessment. Minimum audit requirements were met. This issue is closed
- S8.5 (Closed) IFI 50-454/455-98016-01: Specific information required by the security plan for documenting alarms between the first and the last alarm was not recorded. The licensee's immediate corrective action was to advise alarm station operators to acknowledge and clear alarms as early as practical to reduce the volume of alarms with inadequate record information. The licensee submitted a revision (Revision 52 dated August 1998) to their security plan clarifying documentation requirements. This revision was submitted under the provisions of 10 CFR 50.54(p) and was found not to reduce the effectiveness of the security plan. This issue is closed.
- S8.6 (Closed) IFI 50-454/455-98022-01: Challenge testing of the perimeter intrusion detection system by the NRC in November 1998 identified some vulnerabilities. Long term resolution was to be evaluated by the staff.

Interviews with the Station Security Administrator indicated that some physical barrier modifications were initiated which addressed the identified concerns. The inspector, based on observation, concluded that these modifications were adequate to address the identified vulnerability. This issue is closed.

- S8.7 (Closed) IFI 50-454/455-98022-02: Maintenance of the CCTV system was not timely. At the time of the previous inspection, there were thirteen open work requests, most of which were thirty days old. The licensee committed to working with the maintenance staff to improve timeliness.

Inspection showed that two electrical maintenance technicians were dedicated to the CCTV system and effectively reduced the CCTV work request backlog. Timeliness of addressing CCTV issues significantly improved. The inspector's observation of CCTV monitors in both alarm stations showed that picture quality was good. This issue is closed.

- S8.8 (Closed) IFI 50-454/455-98022-03: Not all the physical enhancements to support the licensee's revised tactical defensive strategy were installed or completed at the time of the previous security inspection in November 1998. A walk down by the inspector confirmed that these enhancements were installed. This issue is closed.

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 August 27, 1999. 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
J. Bowers, Assistant Station Security Administrator
R. Cassidy, Assistant Station Security Administrator
R. Colglazier, NRC Coordinator
R. Lane, Nuclear Security Director
R. Lopriore, Site Manager
M. Mareth, Burns Security Site Manager
S. Mills, Station Security Administrator
D. Minor, Burns Security Training Coordinator
B. Saunders, Supervisor, Nuclear Security Operations

NRC

E. Cobey, Senior Resident Inspector

INSPECTION PROCEDURES USED

IP 81700: Physical Protection at Nuclear Power Reactors
IP 92904: Follow-up Plant Support

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-454/455-99014-01	IFI	Loss of security inverter
50-454/455-99014-02	IFI	Impact of Minimum Security Staffing

Closed

50-454/455-97011-02	IFI	Documentation of Loggable Events
50-454/455/98002-01	URI	Compensatory measures for degraded VBS
50-454/455-98003-02	URI	Testing of inoperative alarms
50-454/455/98016-01	IFI	Documentation of alarms
50-454/455/98016-02	IFI	Impact of support staff reduction on performance
50-454/455/98022-01	IFI	Perimeter IDS vulnerabilities
50-454/455/98022-02	IFI	CCTV maintenance was untimely
50-454/455-98022-03	IFI	Defense strategy enhancements not complete

Discussed

None

LIST OF ACRONYMS USED

CCTV	Closed Circuit Television System
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
IDS	Intrusion Detection System
IFI	Inspection Follow Up Item
IQR	Individual Qualification Record
PIF	Problem Identification Form
OSRE	Operational Safeguards Response Evaluation
VBS	Vehicle Barrier System

LIST OF DOCUMENTS REVIEWED

Nuclear Security Services Corporation Letter with enclosure, dated August 20, 1999,
Subject: Defensive Strategy Evaluation August 17-18, 1999

Safeguards Event Log (January thru August 1999)

Burns Security Incident Report dated August 27, 1999 re security computer failure

Borg-Warner Protective Services Quality Assurance Audit Report #EGS 99-03 (April 11-16,
1999)

Byron Station Assessment Report/Nuclear Oversight (N.O.) Assessment NOA-06-99-020
"Security" dated May 24, 1999

PIF B1999-00760 Security Access Problems dated March 4, 1999

PIF B1999-00775 Security Support of Ingress Activities dated March 4, 1999

PIF B1999-00887 Problems Accessing Protected Area at the Guard House dated March 15,
1999

PIF B1999-002687 Security Loggable Event Relating to Compensatory Measures dated
July 29, 1999

PIF B1999-02283 Environmental Conditions Impacting the Effectiveness of the Security System
dated June 15, 1999

PIF B1999-02687 Security Loggable Event Relating to Compensatory Measures

PIF B1999-02706 Security Loggable Event due to Failed Perimeter Alarm Zones