

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-454/89010(DRP); 50-455/89012(DRP)

Docket Nos. 50-454; 50-455

License Nos. NPF-37; NPF-66

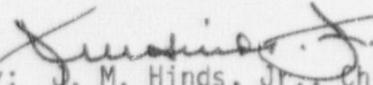
Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, IL 60690

Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Station, Byron, Illinois

Inspection Conducted: April 1 - May 17, 1989

Inspectors: P. G. Brochman  
N. V. Gilles  
G. L. Pirtle  
L. N. Olshan

Approved By:  J. M. Hinds, Jr., Chief  
Reactor Projects Section 1A

**JUN 05 1989**  
Date

Inspection Summary

Inspection from April 1 - May 17, 1989 (Report Nos. 50-454/89010(DRP); 50-455/89012(DRP))

Areas Inspected: Routine, unannounced safety inspection by resident, region, and headquarters inspectors of licensee action on previous inspection findings; operational safety; event follow-up; mud build-up in essential service water lines; maintenance/surveillance; security; licensee event reports; spent fuel storage rack replacement; regional requests; and meetings.

Results: No violations or deviations were identified. However, an event discussed in paragraph 4 is of concern to the NRC and was indicative of non-conservative and imprudent judgement by the licensee, and resulted in the 1A Diesel Generator being physically inoperable for longer than what is allowed by Technical Specifications without the required actions being taken.

## DETAILS

### 1. Persons Contacted

#### Commonwealth Edison Company

R. Pleniewicz, Station Manager  
\*G. Schwartz, Production Superintendent  
\*R. Ward, Technical Superintendent  
\*J. Kudalis, Service Director  
\*D. Winchester, Quality Assurance Superintendent  
\*T. Higgins, Assistant Superintendent, Operating  
T. Tuion, Assistant Superintendent, Maintenance  
D. St. Clair, Assistant Superintendent, Work Planning  
J. Schrock, Operating Engineer, Unit 1  
T. Gierich, Operating Engineer, Unit 2  
T. Didier, Operating Engineer, Unit 0  
D. Brindle, Operating Engineer, Administration.  
M. Snow, Regulatory Assurance Supervisor  
\*R. Flahive, Technical Staff Supervisor  
S. Barret, Health Physics Supervisor  
S. Wilson, Chemistry Supervisor  
P. O'Neil, Quality Control Supervisor  
\*D. Goble, Security Supervisor  
A. Chernick, Training Supervisor  
\*G. Toleski, Corporate Security  
\*W. Walter, Assistant Technical Staff Superintendent  
W. Pirnat, Regulatory Assurance Staff  
\*E. Zittle, Regulatory Assurance Staff  
\*W. Dean, Onsite Nuclear Safety

#### International Atomic Energy Agency

\*K. Rekittke, OSART Team Member  
\*J. Dular, OSART Team Member  
\*J. Becvar, OSART Team Observer

The inspector also contacted and interviewed other licensee and contractor personnel during the course of this inspection.

\* Denotes those present during the exit interview on May 17, 1989.

### 2. Action on Previous Inspection Findings (92701)

a. (Closed) Open Item (454/84038-01(DRS)): Auxiliary Feedwater flow control valves, AF005, will not throttle effectively below 50% flow, so as to permit automatic control of the auxiliary feedwater flow rate to each steam generator. Previous modifications of the Auxiliary Feedwater system were not fully successful in reducing valve oscillations. Consequently, the licensee decided to replace the trim in the AF005 valves with a trim which exhibits a more

nonlinear response. These actions were completed for Unit 2 by Modification M6-2-88-032. The inspector reviewed the results of the post-modification test and agrees that this modification appears to have resolved the automatic control problem. The change to the Unit 1 AF005 valves is scheduled to be accomplished during the January 1990 refueling outage by modification M6-1-88-032 and is being tracked by action item record (AIR) 6-87-131. Based on the successful completion of the Unit 2 modification and the commitment to perform the same modification on Unit 1, this item is considered closed.

- b. (Closed) Open Item (454/88019-02(DRP)): Inspector concern with the scaling of the main control room residual heat removal (RHR) flow indicators. During follow-up of the event involving inadvertent draining of the reactor vessel below the centerline of the reactor vessel hot leg nozzles on September 19, 1988, the inspector identified a concern regarding the scaling of the RHR flow indicators. There are two RHR flow indicators (one per train) in the control room, and each indicator reads from 0 to 5000 gpm with a non-linear scale (compressed at low flow rates). Based on interviews with licensed operators, the inspector questioned whether it would improve the control of RHR evolutions (such as lowering reactor vessel water level and mid loop operations) if the RHR flow instruments had a linear scale (similar to the containment spray flow rate meter (0-6000 gpm)).

The licensee has reviewed this concern and believes that the present flow indicators are adequate. To make the indicators linear a function generator would have to be installed in the circuit, which is inconsistent with the Westinghouse philosophy of minimizing peripheral electronics in safety-related circuits. Additionally, procedures for lowering reactor vessel level during reduced inventory conditions now use the 120 gpm letdown flowpath, thereby reducing the need for accurate indication at low RHR flow rates.

The inspector held several meetings with licensee operating and technical personnel to review this concern. The licensee believes that changes to the RHR procedures, new reactor vessel level indication, and non-safety-related indicators in the control room obviate the need for rescaling the RHR flow meter. The inspector could not identify any regulation or requirement that would necessitate this change. However, the inspector recommends that the licensee install a function generator in these circuits to linearize the scale to improve the case for which the operators control RHR flow.

Based on this review this item is considered closed.

- c. (Closed) Open Item (455/89007-04(DRP)): Investigation to identify any additional preventive maintenance (PM) or testing of auxiliary relays in the diesel generator undervoltage circuit. This item was opened following the failure of the 2B Diesel Generator (DG) output breaker to close during performance of the 18 month diesel generator

operability surveillance. The cause of the failure was determined to be a dirty contact which caused the failure of auxiliary relay DG2BX. The licensee conducted an investigation to define any additional PM or testing of the auxiliary relays in the undervoltage circuit which might be necessary. The licensee contacted the manufacturer of the auxiliary relays and found that no PM is recommended for this type of relay. In fact, the manufacturer recommended against periodic burnishing of the contacts because this could lead to contact misalignment. The licensee has decided to add steps to the existing quarterly slave relay surveillance which tests this particular auxiliary relay to verify continuity by measuring the voltage drop across the contacts in the relay. These contacts are normally energized during the surveillance and this type of measurement would give the licensee an indication of any degradation which had occurred. The inspectors feel that this additional testing should prevent the recurrence of this type of failure. The licensee is tracking the surveillance procedure revision with an Action Item Record. Based on the commitment to perform this additional testing, this item is considered closed.

### 3. Plant Operations

Unit 1 operated at power levels up to 100% for the entire report period.

Unit 2 operated at power levels up to 92% until 9:10 p.m. on May 16, 1989, when the unit was taken off line due to a leak in the main generator's stator water cooling system (see paragraph 3.b). The unit remained in Mode 4 through the end of the inspection period.

#### a. Operational Safety (71707)

The inspectors observed control room operation, reviewed applicable logs and conducted discussions with control room operators during April and May 1989. During these discussions and observations, the inspectors ascertained that the operators were alert, cognizant of plant conditions, and attentive to changes in those conditions, and that they took prompt action when appropriate. The inspectors verified the operability of selected emergency systems, reviewed tagout records, and verified the proper return to service of affected components. Tours of the auxiliary, fuel-handling, rad-waste, and turbine buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations, and to verify that maintenance requests had been initiated for equipment in need of maintenance.

The inspectors verified by observation and direct interviews that the physical security plan is being implemented in accordance with the station security plan.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. The

inspectors also witnessed portions of the radioactive waste system controls associated with rad-waste shipments and barreling.

The observed facility operations were verified to be in accordance with the requirements established under Technical Specifications, 10 CFR, and administrative procedures.

b. Onsite Event Follow-up (93702)

The inspectors performed onsite follow-up activities for events which occurred during May 1989. This follow-up included reviews of operating logs, procedures, Deviation Reports, Licensee Event Reports (where available), and interviews with licensee personnel. For each event, the inspectors developed a chronology, reviewed the functioning of safety systems required by plant conditions, and reviewed licensee actions to verify consistency with procedures, license conditions, and the nature of the events. Additionally, the inspectors verified that the licensee's investigation had identified the root causes of equipment malfunctions and/or personnel errors and that the licensee had taken appropriate corrective actions. Details of the events and the licensee's corrective actions developed through inspector follow-up are provided in the paragraphs below:

(1) Unit 1 - Diesel Generator Failure To Reach Rated Load

On May 1, 1989, with the unit at approximately 80% power and ramping up to 100% power, the 1A Diesel Generator (DG) failed to reach its rated load of 5500 KW in less than 60 seconds during the performance of its semi-annual operability surveillance. The DG loaded to 5400 KW in approximately 40 seconds and then stopped. At that point, the DG could not be controlled from the main control board. The DG subsequently drifted to approximately 5600 KW and then had to be unloaded locally. The licensee declared the DG inoperable and began an investigation into the cause of the failure.

The investigation revealed that, on April 19, 1989, maintenance had been performed on the 1A DG which consisted of balancing the fuel metering rods and replacing the fuel control cylinder ("bimba" cylinder). After the maintenance was complete, the monthly operability surveillance for the 1A DG was performed. In accordance with this procedure, the DG was started manually and gradually loaded to 5500 KW. The DG successfully passed the operability surveillance and no problems were identified. The semi-annual operability surveillance which was performed on May 1 requires that the DG be automatically started in the emergency mode and loaded to 5500 KW in less than 60 seconds. The licensee discovered that the bimba cylinder was slightly out of adjustment such that the fuel racks could not deliver enough fuel to perform the fast load test within the required time, since more fuel is required to reach the same point during fast loading than during gradual loading.

Subsequent to the failure, the licensee re-adjusted the bimba cylinder and successfully performed an automatic start and fast load of the DG. The licensee plans to issue a Licensee Event Report (LER) on this event since the DG was technically inoperable from April 19 through May 7 (greater than the 72 hours allowed by Technical Specifications) because it could not meet one of the acceptance criteria defined in the Technical Specifications. The inspectors will follow up on this event in a future inspection, after the LER has been issued.

(2) Unit 2 - Shutdown Due to a Leak in the Main Generator Stator Water Cooling System

At 12:00 p.m. on May 16, 1989, the licensee commenced a controlled shutdown of the unit due to a leak in the main generator's stator water cooling system, and at 9:10 p.m. the unit was taken off line. The licensee first detected the leak on May 15 due to the leakage of hydrogen into the stator water system. Initial estimates of the leakage rate were approximately 475 cubic feet per day. The licensee performed a pressurization test of the stator water cooling system to determine the location of the leak and repairs were made. The licensee has had a previous experience with this type of problem on Unit 2 in late 1987. Both the previous leak and the present leak were due to cracks in an equalizing header in the stator water cooling system. The licensee is reviewing the similarity of these two events and the inspectors will follow up on the licensee's investigation.

c. Mud Build-up in Essential Service Water Lines (71707)

On September 26, 1988, during the scheduled replacement of the Unit 1 6-inch Essential Service Water (ESW) suction line to the Auxiliary Feedwater (AF) system, excessive quantities of mud were found in the line. Approximately 2 1/4 inches of mud were found, in the bottom of the pipe, which represents approximately 30% line blockage. This build-up was undetected until the piping was cut out for replacement. This line is generally stagnant and pipe wall pitting and corrosion had occurred requiring replacement of the line. On February 3, 1989, during the scheduled replacement of the Unit 2 6-inch ESW suction line to the AF system, again, excessive quantities of mud were found in the line. Approximately 2 3/4 inches of mud were found, in the bottom of the pipe, which represents approximately 45% line blockage.

In both cases, the licensee had Sargent & Lundy (S&L) perform an analysis to ensure that adequate Net Positive Suction Head (NPSH) would have existed for the auxiliary feedwater pumps had they been required to operate with ESW as a suction source. The inspectors reviewed the S&L analysis and verified that adequate NPSH existed at all times. In addition, the inspectors asked the licensee to determine if other stagnant ESW lines existed which might be susceptible to a similar type of mud build-up. Specifically, the

inspectors identified the ESW supply crosstie lines to the Diesel Generators (DGs) as an area where this problem could also exist. The licensee informed the inspectors that the 1B DG jacket water cooler was inspected as part of the 5-year DG inspection program which occurred during the Unit 1 refueling outage (Fall 1988). The results of the inspection showed no indication of significant corrosion or deterioration of the ESW side of the coolers. On March 29, 1989, the ESW crosstie lines to both Unit 2 DGs were flushed for 30 minutes. There was no evidence of abnormal jacket water system operation either during the flush or during the post-flush DG operability runs. The licensee also flushed the Unit 1 crosstie line prior to the April 5, 1989 operability surveillance run of the 1A DG. The licensee is considering performing the flushing procedure semi-annually to prevent the accumulation of stagnant corrosives in the crosstie piping. This is presently under review by licensee management.

The licensee has committed to identify if any other stagnant ESW lines exist which may be susceptible to this problem. The inspectors will follow up on this issue in a future inspection, when this information is provided by the licensee.

No violations or deviations were identified.

4. Maintenance/Surveillance (61726 & 62703)

Station maintenance and surveillance activities of the safety-related systems and components listed below were observed or reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, and industry codes or standards, and in conformance with Technical Specifications.

- Unit 2 Solid State Protection System functional testing
- Unit 1 "A" Diesel Generator fuel rack adjustment
- Unit 1 "A" Diesel Generator monthly and semi-annual operability surveillance
- Diesel Generator painting activities

The following items were considered during this review: the limiting conditions for operation were met while affected components or systems were removed from and restored to service; approvals were obtained prior to initiating work or testing; quality control records were maintained; parts and materials used were properly certified; radiological and fire prevention controls were accomplished in accordance with approved procedures; maintenance and testing were accomplished by qualified personnel; test instrumentation was within its calibration interval; functional testing and/or calibrations were performed prior to returning components or systems to service; test results conformed with Technical Specifications and procedural requirements and were reviewed by personnel other than the individual directing the test; any deficiencies identified during the testing were properly documented, reviewed, and resolved by appropriate management personnel; work requests were reviewed to

determine the status of outstanding jobs and to assure that priority was assigned to safety-related equipment maintenance which may affect system performance.

During this inspection period the inspectors reviewed an event which occurred on March 28, 1989, involving the failure of the 1A Diesel Generator (DG) to start during the performance of its monthly operability surveillance. The cause of the failure was mechanical binding of the fuel metering rods due to paint which had dripped into the opening on the back of the jerk pumps, through which the fuel metering rods exit, and then dried; thereby preventing the fuel metering rods from moving far enough to allow the DG to start. Painting activities on the 1A DG began on March 13 and were completed on March 23. On March 28, the licensee was performing the routine 1A DG monthly operability surveillance (IBOS 8.1.1.2.a-1) when the DG failed to start. The DG failed to start both manually and in the emergency mode. Subsequent investigations revealed that the DG was physically inoperable and would not have performed its intended safety function had it been called upon to do so.

The licensee identified the root cause of this event as a failure to have an adequate program to assure equipment operability after painting. Licensee engineers were performing daily walkdowns of the DG to identify potential problems. However, the exit location of the fuel metering rods was not readily visible. These daily inspections had been instituted in response to a previous event which occurred on March 8, 1989, where the 1B DG failed to start in less than the required 10 seconds during its operability surveillance due to paint interfering with the operation of an air pilot valve. This valve is only required to function in the test mode; therefore, it did not affect the ability of the DG to perform its safety function. However, this event should have alerted the licensee to the possibility that painting activities may affect DG operability and of the need to ensure operability through testing as soon as practical when painting activities were completed. Technical Specification 3.8.1.1 requires that, with one DG inoperable, operability of the remaining A.C. electrical power sources be demonstrated within 1 hour and the inoperable DG be restored within 72 hours, or the unit be shutdown. Even though the time that the 1A DG became inoperable cannot be definitely determined, it can be reasonably surmised that the DG was inoperable at the time painting activities were completed on March 23. While the inspectors agreed with the licensee's expectations that painting activities should not render the DGs inoperable, prudent and conservative action would have been to test the 1A DG as soon as was practical, and at least within 72 hours after painting activities were completed, especially in light of the previous problem that the licensee had experienced, to ensure that the 1A DG had in fact remained operable. As a consequence of waiting 5 days after painting was complete to perform the monthly operability surveillance, the licensee did not discover that the 1A DG was physically inoperable until approximately 110 hours after the painting was completed.

Corrective actions initiated by the licensee in response to this event included cleaning of the metering rods, verifying free motion of the

rods, and successful completion of the operability surveillance. The other three DGs were inspected to ensure no similar problems existed. The painting crews were instructed to inspect these areas and other fuel rack linkages during painting. Inspection efforts by system engineers were increased to check all accessible moving parts and critical components. Daily meetings were held with the painting crews to ensure their awareness of any other potential problems. The painting foreman's involvement was increased to ensure more independent review of painting activities. Following painting of the Unit 2 DGs, they were tested to ensure operability and no further problems occurred.

The NRC has evaluated this event and concluded that the circumstances do not warrant the issuance of a Notice of Violation. The licensee had taken reasonable precautions to ensure that the DG should not have become inoperable during its painting. However, after the painting was completed, the decision not to perform a routine surveillance within at least 72 hours, to assure that the DG had in fact remained operable, especially in light of the problem experienced on the 1B DG, was imprudent and non-conservative; and is indicative of an inappropriate maintenance philosophy.

No violations or deviations were identified.

## 5. Security

### a. Review of Licensee's Actions in Response to Allegation

#### RIII-89-A-0026

Background: On February 17, 1989, NRC Region III received an allegation concerning the use of controlled substances onsite at Byron. The alleged substance abuse involved three named non-licensed contractor employees not involved in safety-related activities and one unnamed contractor supervisor. Also, one of the named contractor employees was allegedly found to possess a marijuana pipe when attempting to enter the site.

NRC Actions: The licensee's Corporate Security Office was advised of the allegation by telephone on February 17, 1989. A letter, dated March 10, 1989, was sent to the licensee requesting that an investigation of the allegation be initiated and NRC Region III be advised of the investigation results. The licensee responded by letter, dated April 18, 1989, which addressed their investigation results and conclusions. The NRC Region III staff's review showed that the investigation was sufficient to support the licensee's conclusions and is documented in a letter from J. N. W. Hickey to C. Reed, dated May 1, 1989.

The investigation concluded that the allegation of drug abuse was not substantiated and that safety-related equipment was not involved or degraded.

The basis for the licensee's conclusion included urine test results of the three named individuals on February 20, 1989. All test results were negative. Behavioral observation and attendance records for the three individuals were also reviewed and no adverse observations were noted. On February 22, 1989, unescorted access for two of the three contractor employees was reinstated (site access had been denied on February 17, 1989, pending resolution of the allegation). However, based upon an incident in October 1988 in which one of the named individuals was found to possess a pipe, commonly referred to as a marijuana pipe, when attempting to enter the site, continued access for that individual is based upon voluntary participation in a random unannounced drug test program for a period of time not to exceed one year. Additionally, the contractor employee was counseled and received a warning for the pipe incident, even though he denied that the pipe belonged to him. (The pipe was not allowed within the protected area.)

Finally, the licensee's investigation concluded that a security officer's actions subsequent to the discovery of the marijuana pipe in October 1988 were deficient because it was not brought to the attention of the proper contractor and licensee management in as timely a manner as expected by established practices or in accordance with instructions provided in the directive governing handling of drug paraphernalia. Corrective actions to address this deficiency consisted of distribution of a letter, dated February 27, 1989, to all security officers regarding the handling of illegal drugs and drug paraphernalia. All security force personnel were required to document that they have read the instructions. Effective March 31, 1989, information in the letter was to be incorporated into the applicable post orders. Implementation of these corrective actions will be reviewed during a future inspection as open item 454/89010-01(DRSS); 455/88012-01(DRSS).

The contractor supervisor's fitness for duty was reviewed and determined to be adequate based upon documentation for behavioral observation, psychological evaluation, a past drug screening result, and interview results with a senior manager of the contractor firm.

Conclusion: The allegation pertaining to substance abuse by named contractor employees was not substantiated. The allegation that a named contractor employee possessed an alleged marijuana pipe when attempting to enter the site was substantiated. The pipe was detected before being taken into the protected area of the plant. A security officer's actions when the pipe was discovered were not in accordance with established practices. The licensee's proposed corrective actions should resolve the deficiency and will be reviewed by NRC Region III.

b. Review of Licensee's Actions in Response to Allegation  
R111-89-A-0059

Background: While onsite from March 27 through 31, 1989, a physical security inspector and the resident inspector were briefed by the licensee's security staff on the contents of a letter they had received dated March 22, 1989. A copy of the same letter was sent to NRC Region III. The letter addressed 11 security related concerns, some of which had subparts. Of the 11 concerns, it was determined that 3 warranted NRC followup. The remaining issues addressed concerns that were not regulatory issues or were being adequately addressed by the licensee. The 3 issues related to NRC responsibilities are addressed below:

- (1) Allegation: Security officers are required to prepare reports containing information about issues discussed with an NRC inspector.

NRC Actions: During an inspection at Byron on March 3, 1989, a security inspector was told by an officer that his supervisor insisted that he prepare a report about everything discussed with the inspector, even though the officer did not feel it was appropriate. The inspector was concerned about the possible "chilling effect" such a policy might have on others considering bringing their concerns to the NRC. The inspector asked senior licensee and contractor security managers what their policy was in reference to requiring written reports on subjects discussed with NRC inspectors. The inspector was advised that written reports were expected only if an NRC inspector notices and alerts a security officer of improper actions or equipment failure. They indicated that reports of security deficiencies were important for assuring corrective actions were taken. The inspector requested that a memorandum be sent to security force members to clarify the policy since there appeared to be a misunderstanding of their policy. The officer involved was not required to complete a written report about his contact with the inspector since no equipment failure or improper actions were discussed.

During a March 27 through 31, 1989 inspection, the inspector confirmed that the memorandum clarifying the licensee's policy on documenting contact with NRC inspectors had been prepared and appropriate personnel were briefed. The memorandum was prepared on March 17, 1989, for dissemination to the security force and identified the policy as described above (documenting inspector identified improper practices and equipment failures). During the inspection, approximately 20 to 25 security personnel, supervisors and non-supervisors, were interviewed and all of the persons clearly understood the policy. The inspector also confirmed that disciplinary action had not been initiated in the past by Burns Security because a security officer refused or failed to prepare a written report about subjects discussed

with an NRC inspector. No personnel interviewed expressed a concern or reluctance about talking to an NRC inspector since the policy had been clarified.

Conclusion: The allegation was substantiated in that a supervisor directed a security officer to document the security officer's contact with an NRC inspector even when the security officer questioned the need for such documentation. The licensee's policy for documenting such contacts was not properly understood by the supervisor. The licensee and contractor security managers' actions clarified their policy and personnel interviewed were knowledgeable of the policy.

- (2) Allegation: Security force members may not take appropriate action to protect the plant against an attempted act of sabotage.

NRC Actions: During a March 27 through 31, 1989, inspection at Byron, a security inspector confirmed that required response force equipment was available, serviceable, and properly located. Contingency drills requiring formation, deployment, command and control of the response force were conducted on a periodic basis, and use of deadly force training was adequate. The most recent training on deadly force was completed on March 21, 1989. During interviews with security force members, no one stated that they could not or would not perform their duties as they understood the duties should be performed. The issue of duty performance was addressed in a broad scope to include routine and emergency duties, not just countering sabotage attempts. During the inspection, Burns Security and the licensee security management were considering measures to further evaluate the issue, to include further interviews with security force members.

Conclusion: The allegation was not substantiated in that the security force at Byron is adequately trained, equipped, and capable of taking appropriate action to protect the plant against an attempted act of sabotage. The licensee and the contract security management should continue to monitor the security force's capability to accomplish this critical objective.

- (3) Allegation: Post rotation is postponed if radio discipline is not maintained.

NRC Actions: Interviews with the Site Security Administrator (SSA) disclosed that on at least two occasions contractor security supervisors had postponed or stopped post rotations because of unauthorized radio transmissions on the security force radio net.

The SSA stated that they had confirmed that the posts required by the security plan to be rotated had been rotated, even when other post rotations had been stopped. The SSA further advised the NRC on April 28, 1989, that the contractor security organization was advised by the licensee that the practice of discontinuing post rotations because of inadequate radio discipline (unauthorized radio transmissions) was not desirable and was to be discontinued.

Conclusion: The allegation was substantiated, but no provisions of the security plan were violated. The licensee's actions should prevent further occurrence of the practice.

No violations or deviations were identified.

6. Safety Assessment/Quality Verification

a. Licensee Event Report (LER) Follow-up (90712 & 92700)

(Closed) LERs (454/89003-LL; 454/89004-LL): Through direct observation, discussions with licensee personnel, and review of records, the following LERs were reviewed to determine that the reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications.

<u>LER No.</u>	<u>Title</u>
<u>Unit 1</u>	
454/89003	Control room and fuel handling building ventilation actuation due to distribution system voltage transient.
454/89004	Diesel Generator inoperable due to paint binding the fuel metering rods.

With regard to LER 454/89004, this LER describes an event where the 1A Diesel Generator (DG) failed to start during its monthly operability surveillance due to paint which had mechanically bound the fuel metering rods. This event is discussed in detail in paragraph 4.

b. Spent Fuel Storage Rack Replacement (50095)

The inspectors observed activities associated with the installation of new, high density spent fuel storage racks during this inspection period. The NRC issued an amendment to the Byron Operating License on March 17, 1989, authorizing the licensee to increase the capacity of the spent fuel pool from the previously approved capacity of 1060 fuel assemblies to an increased capacity of 2870 fuel assemblies through the use of high density storage racks. The inspectors, through direct observation, review of records, and attendance at

Onsite Review meetings, verified that receipt inspection and storage records were complete, that work procedures provided adequate instructions for the control of rigging and handling of the racks to prevent damage, removal of existing rack structures, proper location and orientation of new racks, and final clearance checks, that personnel were properly trained and qualified, and that the QC inspection was adequate. The installation of the new storage racks will be ongoing for several months and the inspectors will continue to observe these activities.

c. Regional Requests (92701)

(1) Diesel Fuel Oil Reliability

The inspectors received an April 5, 1989 memorandum from E. G. Greenman to Region III Senior Resident Inspectors requesting information on diesel fuel oil reliability. As per the instructions in the memo, the inspectors discussed the Perry event with the licensee in which a diesel generator was declared inoperable due to high insolubles in the diesel fuel oil. In addition, the inspectors obtained information concerning the fuel oil presently being used at Byron, its estimated shelf life/stability period, and the frequency of fuel oil change out. This information was telephonically transmitted to the Region III Technical Support Staff on April 21, 1989.

(2) Recent Operational Events At Other Plants

In memorandums from E. G. Greenman to Senior Resident Inspectors dated May 1 and May 3, 1989, it was requested that licensee management be briefed regarding two recent operational events which had occurred in other regions. The first event involved the failure of a freeze plug in an open six inch service water line during valve maintenance due to inadequate temperature monitoring of the freeze plug. The failure resulted in flooding which disabled power to safety-related equipment. This event was discussed with the licensee on May 3, 1989, to ensure that the licensee is sensitive to proper freeze plug operations and potential problems involved.

The second event involved findings by Region V inspectors concerning a hydrogen tank farm located on the roof of the control room. The inspectors were requested to obtain the following information from the licensee:

- (a) Distance from the hydrogen storage facility to the nearest safety-related structure or air intake.

Response: The nearest safety-related structure is the OA Essential Service Water Basin and its associated switchgear. This structure is approximately 475 feet to the southwest of the hydrogen storage facility.

- (b) Maximum volume of gaseous or liquid hydrogen stored onsite in standard cubic feet (scf) or gallons respectively.

Response: There is space provided for parking 2 hydrogen tube trailers. Each tube trailer is capable of storing 40,000 scf of hydrogen. Normally, only one trailer is used. There are also 9 fixed storage vessels capable of storing 60,000 scf. This gives a total potential storage capacity of 100,000 scf of hydrogen.

This event was discussed with the licensee on May 4, 1989, and the requested information received and transmitted to Region III on May 8, 1989.

No violations or deviations were identified.

7. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in paragraph 5.a.

8. Meetings

a. Management Meetings (30702)

- (1) On April 11, 1989, A. B. Davis, Regional Administrator, and members of his staff met with T. J. Maiman and others at the Region III office to discuss NRC concerns involving the Byron licensed operator training program. These concerns were identified during NRC administered examinations at Byron in January 1989.

Those concerns raised by the Regional staff included the method used to determine eligibility and selection for license training at Byron, training and evaluation practices used, accuracy of training materials, and the Byron support for NRC exam reviews.

It was determined by the licensee during the meeting that a review of their selection and eligibility determination practices is in order to ensure that they are equivalent to the NRC standards.

The licensee also expressed a concern that without NRC input the licensee could not correct the factual errors in their reference material. The Region assured the licensee that any errors discovered by the NRC would be brought to their attention.

Based on the number of specific exam questions it was agreed that a working level meeting would be held to discuss the

concerns. The Region recommended that, as some of the detailed concerns appeared to be relevant to other Commonwealth Edison sites, other sites be invited to observe the meeting.

- (2) On May 10, 1989, Messrs. A. B. Davis, Regional Administrator, RIII, J. W. N. Hickey, Acting Director, Division of Radiation Safety and Safeguards, J. M. Hinds, Jr., Chief, Reactor Projects Section 1A, and the NRC Resident Inspectors toured the Byron plant and met with licensee managers to discuss plant performance, plant material condition, and the upcoming Operational Safety Review Team (OSART) inspection.
- (3) On May 15, 1989, Messrs. A. B. Davis, Regional Administrator, RIII, W. L. Forney, Deputy Director, Division of Reactor Projects, Region III, B. K. Grimes, Director, Division of Reactor Inspection and Safeguards, NRR, Ms. M. J. Mahy, International Relations Specialist, International Programs, and the NRC Resident Inspectors attended the OSART Entrance Meeting and press briefing along with T. Maiman, Vice President, PWR Operations for Commonwealth Edison, R. Pleniewicz, Byron Station Manager and members of their staffs.

b. Exit Interview (30703)

The inspectors met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection on May 17, 1989. The inspectors summarized the purpose and scope of the inspection and the findings. The inspectors also discussed the likely informational content of the inspection report, with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents or processes as proprietary.