U.S. NUCLEAR REGULATORY COMMISSION
REGION I

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| Licensee: | PECO Energy<br>Correspondence Control Desk<br>P.O. Box 195<br>Wayne, Pa 19087-0195 |
| Facility Name: | Limerick Generating Station, Units 1 and 2 |
| Inspection Period: | May 3, through June 6, 1994 |
| Inspectors: | N. S. Perry, Senior Resident Inspector<br>T. A. Easlick, Resident Inspector<br>A. D. Wilford, NRR Reactor Engineer Intern |

Approved by: Clifford J. Anderson, Chief — Date 6/15/94
Reactor Projects Section No. 2B

EXECUTIVE SUMMARY
Limerick Generating Station
Report No. 94-12 & 94-12

Plant Operations

During a reactor water cleanup (RWCU) system resin transfer, an alarm was received on the south vent stack noble gas monitor when the high alarm setpoint was exceeded. A dose assessment was performed by a health physics technician who failed to properly enter the projected release time into the dose assessment computer code. In addition, the technician failed to acknowledge that an Emergency Action Level (EAL) for declaration of an Unusual Event (UE) had been exceeded, and therefore told the Shift Supervisor that no action was required. This resulted in a non-cited violation. The inspectors reviewed PECO Energy's corrective actions, and found them to be comprehensive. The decision of the Shift Manager not to declare a UE will remain an unresolved issue pending further NRC review of the event (50-353/94-12-01, Section 1.3). As a result of a recent upgrade modification to the Limerick Generating Station simulator, a discrepancy was identified by PECO Energy when the upgrade to the simulator model recognized a calibration difference between level instruments. An error on Fuel-Zone "Indicated Water Level," causes indicated level to appear lower than actual levels. Overall, PECO Energy's response to this self-identified problem has been thorough and comprehensive. The use of the simulator to identify this problem is a strength at Limerick (Section 1.4).

Maintenance

The inspectors observed work activities associated with Control Room Chiller 0B-K112. The maintenance personnel properly followed procedures and written instructions. The workers were knowledgeable, and good supervisory oversight of the activities was observed (Section 2.1). On May 30, 1994, a notification was made concerning an unplanned engineered safety feature (ESF) actuation due to a Unit 1 isolation of valve HV46-127 which supplies control rod drive purge flow to the recirculation pump seals. I&C technicians performed a nuclear steam supply shutoff system (NSSSS) refuel floor high radiation surveillance test and failed to implement a step in the procedure that would have reset the existing isolation signal. This item will remain unresolved pending NRC review of PECO Energy's completed investigation, including the root cause of the event and corrective actions (50-352/94-12-02. (Section 2.2).

Surveillance

The inspectors observed the performance of a Unit 1 RCIC Pump, valve and flow test. The inspectors noted that a test pre-brief was conducted with both personnel in the control room, and personnel in the RCIC room. HP coverage for the RCIC room was provided, as required, and an RWP was established to control access to the room. The inspectors verified

that the procedure was conducted in accordance with the approved PECO Energy procedure. Additional surveillances observed, associated with Unit 1 HPCI and D23 Diesel Generator, were well run and supervised (Section 3.1).

Engineering

The plant staff's overall response to problems associated with both of the RCIC systems was assessed as weak. Operators did not identify a low oil level on the Unit 1 RCIC pump. Furthermore, it took over 2 days for plant personnel to add oil to the Unit 2 RCIC oil pump. Loose setscrews identified on the Unit 1 RCIC governor valve linkage was left as an unresolved item pending NRC review of PECO Energy's completed investigation (50-352/94-12-03, Section 4.1).

Plant Support

On May 11, 1994, plant personnel conducted a practice emergency drill. Inspectors observed portions of the drill from the Emergency Operating Facility (EOF) in Coatesville, PA. Operations and briefings in the EOF were effective. The drill adequately met the goal of providing plant personnel with training for the annual exercise and potential plant events (Section 5.3).

Miscellaneous

An unresolved item was closed concerning the performance of a surveillance test on February 12, 1994, during which the 1B RHR shutdown cooling return valve (HV-051-1F015B) received an isolation signal on low reactor vessel water level. The inspectors assessed that PECO Energy's review of, and corrective actions for, this event were adequate (Section 7.0).

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DETAILS

## 1.0 PLANT OPERATIONS (71707)[1]

The inspectors observed that plant equipment was operated and maintained safely and in conformance with license and regulatory requirements. Control room staffing met all requirements. Operators were found alert, attentive and responded properly to annunciators and plant conditions. Operators adhered to approved procedures and understood the reasons for lighted annunciators. The inspectors reviewed control room log books for trends and activities, observed control room instrumentation for abnormalities, and verified compliance with technical specifications. Accessible areas of the plant were toured; plant conditions, activities in progress, and housekeeping conditions were observed. Additionally, selected valves and breakers were verified to be aligned correctly. Deep backshift inspection was conducted on May 8, 14, 26, and June 5, 1994.

### 1.1 Operational Overview

Both units operated at full power throughout the inspection period with the exception of slight power reductions in Unit 1 due to increasing turbine backpressure, a Unit 2 load drop to 75%, and minor reductions for surveillance testing and control rod pattern changes. The increased turbine backpressure in Unit 1 was a result of reduced cooling tower efficiency due to weather conditions and repair work. The load drop to 75% in Unit 2 was planned to do control rod scram timing tests, condenser maintenance, and routine testing of the 2B reactor feed pump.

### 1.2 Event Reports

On May 25, 1994, a notification was made to the NRC concerning the loss of 18 offsite emergency sirens due to a thunderstorm that caused a loss of local AC power. Limerick Generating Station has a total of 168 emergency sirens, and procedures require that a notification be made to the NRC if more than 17 (10%) are inoperable. Instrumentation and Controls (I&C) personnel monitored siren status, and power was restored to all emergency sirens by May 27, 1994.

On May 30, 1994, a second notification was made to the NRC concerning an unplanned engineered safety feature (ESF) actuation due to a Unit 1 isolation of valve HV46-127 which supplies control rod drive purge flow to the recirculation pump seals. This event is described in section 2.2. The inspectors had no further questions concerning these events, and will review the Licensee Event Reports associated with these events as part of the routine inspection program.

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[1]The NRC Inspection Procedures used as guidance are listed parenthetically throughout this report.

### 1.3 Resin Backwash Stack Release

On May 24, 1994, at 12:11 AM with Unit 2 at 100% power, an alarm was received on the south vent stack noble gas monitor when the high alarm setpoint was exceeded. The operators were in the process of transferring resin from the reactor water cleanup system (RWCU) to a receiving tank, prior to transferring the resin to radwaste for processing. An alarm is expected on Unit 2 whenever RWCU resin is transferred, as a result of a 1992 fuel pin leak during the previous operating cycle. The operators immediately entered Transient Response Implementation Plan procedure (T)-104, Radioactivity Release Control, which directs the performance of Gaseous Effluent Dose Rate Determination, surveillance test (ST)-6-104-880-0. The ST directs health physics (HP) to perform a dose assessment using ERP-300, TSC/MCR Dose Assessment Team. At 12:15 AM the shift HP technician was contacted in the HP field office and asked to report to the main control room to perform the dose assessment. The initial calculated projected offsite dose, completed at 12:34 AM, was 8.85 E-2 mrem/hr. At the time, the HP technician failed to acknowledge the fact that the projected offsite dose was in excess of the Emergency Action Level (EAL), for an Unusual Event (UE) declaration, of 5.7 E-2 mrem/hr TPARD (Total Protective Action Recommendation Dose). The HP technician attached the completed dose assessment data sheets to the ST and presented it to the Shift Supervisor for his review stating that no action was required (as had been done in the past for previous gas monitor high alarms due to resin transfers). The HP technician then left the control room and returned to the HP field office. With the completion of the resin transfer to the receiving tank, and with what was believed to be a satisfactory dose assessment, the Shift Supervisor gave the radwaste technician permission to process the receiving tank.

At approximately 1:00 AM, the Shift Supervisor reviewed the completed ST and dose assessment and realized that the EAL for a UE declaration had been exceeded. He immediately contacted the radwaste technician and instructed him to delay processing the receiving tank (no action had been taken by the radwaste technician up to that point; all of the resin was still in the receiving tank). The Shift Supervisor then notified the Shift Manager, who was present in the control room at the time. The Shift Manager reviewed the dose assessment data sheets and believed that the HP technician must have incorrectly inputted the data for the dose model calculation. The high alarm had been received on previous resin transfers, but an EAL had never been exceeded. The knowledge of previous history and the current steady state plant conditions, with no other abnormal indications or alarms, led the Shift Manager to question the accuracy and validity of the dose assessment. The HP technician was called back to the control room to review the data and perform an additional confirmatory dose assessment. Discussions between the Shift Supervisor and the HP technician identified that the HP technician had used 12:19 AM as the projected release time based on a second alarm that had been received on the south stack gas monitor. The Shift Supervisor instructed the HP technician to use 12:11 AM (the time of the first alarm) as the projected release time. The recalculated offsite dose, completed at 1:21 AM was 1.1 3 E-3 mrem/hr, which was lower than the UE EAL. The second calculation led to confusion

on the part of the Shift Manager, since the release concentration selected by the computer code in the auto mode was significantly lower than the release concentration in the first calculation.

After the second dose assessment, three additional calculations were performed by the HP technician prior to 2:00 AM, varying the projected release time and duration of release. One of these calculations resulted in a dose of greater than the EAL for a UE declaration. At approximately 1:30 AM, the HP technician realized that he had failed to follow a caution in the ERP-300 procedure, which stated "For Auto Mode a Time of Release = Time of Hi Alarm Annunciation Plus 15 Minutes." Three calculations were performed using 12:34 AM (12:19 AM + 15) for the projected release time, and all results were less than the EAL. The Shift Manager was not convinced that the EAL had been exceeded. He attempted, but was not successful in contacting the Radiation Protection Manager for technical assistance. At 2:00 AM, the Shift Manager contacted the Operations Manager and the Plant Manager to inform them of the event, and to seek additional guidance. The inspectors assessed that at no time did the Shift Manager relinquish his authority in regard to making a decision to declare an emergency condition. He had stated during interviews that if at any time during that night he had believed that an actual release in excess of the EAL for a UE had occurred, he would have made the appropriate emergency declaration and notifications. Following a conversation with the Plant Manager, the Site Support Services Director and the Health Physics Support Manager were called to the plant to assist the Shift Manager in determining if an unusual event condition existed.

Between the hours of 3:30 AM and 8:30 AM, six additional dose assessment calculations were performed in the manual mode, under the direction of the Health Physics Support Manager. All of these were less then the EAL. The final calculation completed at 6:00 PM on May 24, 1994, was 4.29 E-2 mrem/hr, which again was lower than the UE level. On June 3, 1994, a regional based inspector evaluated PECO Energy's actions, including (1) quantification technique for the total noble gas release, (2) procedures, and (3) projected dose calculation results. The inspector noted that PECO Energy's use of a 10 minute average (and/or 15 minute average) technique to quantify the total amount of release resulted in a number higher than the true amount. The inspector discussed the quantification technique with the plant staff. PECO Energy calculated the total/actual amount of release for about 25 minutes (with a 1 minute spike) and calculated the projected offsite dose. The result was 7.382 E-3 mrem/hr, which was lower than the UE EAL by a factor of 10.

Based on the above reviews and discussions, the inspector determined that there was no impact to the public health and safety and the environment.

The inspectors were concerned with the event evaluation conducted by the plant staff for this event. Apparently, the failure of the HP technician to properly perform the ERP-300 procedure, and identify the fact that an EAL was exceeded, was not identified for several days after the event. This was a significant factor in understanding why there was an approximately 50 minute delay between the initial dose assessment and the confirmatory dose

Enforcement Policy and will not be cited. The decision of the Shift Manager not to declare an Unusual Event will remain an unresolved issue pending further NRC review of the Shift Manager's decision process for not declaring a UE, which will be provided by PECO Energy. (50-353/94-12-01).

### 1.4 Fuel Zone Indication

As a result of a recent upgrade modification to the Limerick Generating Station simulator, a discrepancy was identified by PECO Energy personnel when the upgrade to the simulator model recognized a calibration difference between reactor level instruments (this had not been the case with the earlier simulator model). An error on Fuel-Zone "Indicated Water Level," causes indicated level to appear lower than actual levels when used within the level ranges required by the transient response implementation plan (TRIP) procedures. This could cause the operator to control actual level higher than assumed in the basis for the Emergency Procedure Guidelines used in the development of the TRIP procedures.

The discrepancy results from the fact that Fuel-Zone level transmitters are calibrated for a cold/depressurized reactor condition. The design basis reactor conditions used for the original calibration endpoint determinations were 212 degrees F and 0 psig. Therefore, use of the Fuel-Zone level indication under elevated pressure conditions imposes an unaccounted for level error. This error is due primarily to the difference in the density of water and steam in the vessel at the elevated vessel pressure (above calibration conditions). During an anticipated transient without a scram (ATWS) scenario, the operator may be required to lower reactor water level to reduce power. Reactor water level may be required to be lowered below -150". This would require the use of the Fuel-Zone level indication, which has a range of -100" to -350". During this operation, reactor pressure would be controlled by the safety relief valves. Therefore, reactor pressure may be greater than 1000 psig.

A team of operations, engineering and training personnel was assembled to develop the immediate and long term corrective actions. Immediate corrective actions included a temporary change (TC) to TRIP flowcharts T-111, Level Restoration, and T-117, Level Power Control, placement of an Operator Aid next to the Fuel Zone indicator and recorder in the control room, and an immediate operator briefing for each oncoming duty team. The TRIP TC and the Operator Aid provide pressure calibration compensation curves on a graph to correct indicated Fuel Zone level to actual level in the reactor, so that the TRIP strategies can be implemented effectively. The graph has three curves that represent the following three pertinent reactor level control points identified by TRIPS: -161", -190", and -204". The curves equate reactor pressure to indicated Fuel-Zone level indication. Prior to implementing the TC and Operator Aid, shift team briefings were completed, and simulator scenarios were run with the operating teams to assess the effectiveness of the corrective actions.

assessment. Additionally, the difference between the input data for these two dose assessments was not known 3 days after the event. This was important since the second offsite dose calculation was below the EAL for a UE.

The following immediate corrective actions were taken by PECO Energy:

- The Plant Manager reinforced to all operations managers his expectation that, while it is prudent to maintain a questioning attitude, they still must act conservatively when assessing plant conditions for purposes of emergency planning.

- The Health Physics section started an on call list of physicists available to answer dose assessment questions.

- The isotopic breakdown assumed in the computer model was changed to more accurately reflect the makeup of gaseous releases from resin backwashes.

- In addition, this event was discussed at a HP technician meeting on May 26, 1994.

The following long term corrective actions will be taken:

- The ODCM will be revised to allow use of the Worst Sector Annual Average Dispersion Factor for determination of compliance with the offsite dose rate limit stated in ODCM Section 3.3.2a.

- An analysis will be performed by HP to determine release activity trigger levels below which dose assessment is not required. Gaseous releases above these values will require dose assessment to be performed.

- ST-6-104-880-0 will be revised to incorporate the results of the above analysis requiring Operations to determine if dose assessment is required based on effluent release data.

- The Radiation Protection Manager committed to personally meet with all dose assessment trained HP technicians to discuss this event.

- A review of the system operating procedures governing resin transfer activities has been initiated. This review will incorporate lessons learned from this event.

The failure of the HP technician to properly enter the projected release time into the dose assessment computer code, and to immediately notify the Shift Manager of an offsite TPARD of greater then 5.7 E-2 mrem/hr, is a violation of Technical Specification Section 6.8.1. The inspectors reviewed PECO Energy's corrective actions, completed and planned, as of the end of this report period. They were comprehensive and should prevent recurrence. This violation meets the criteria for enforcement discretion of Section VII of the NRC's

Enforcement Policy and will not be cited. The decision of the Shift Manager not to declare an Unusual Event will remain an unresolved issue pending further NRC review of the Shift Manager's decision process for not declaring a UE, which will be provided by PECO Energy. (50-353/94-12-01).

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PORC reviewed the Operator Aid and associated issues and concluded the application of the Aid to be appropriate. PORC requested the Operator Aid be modified to stress the difference between indicated and actual level. This has been included. PECO Energy is currently pursuing two items resulting from this issue. The first is the development of a modification to incorporate pressure compensation in the level instrumentation. This would provide a permanent correction for the discrepancy in level indication and alleviate the need for operator interpretation. The modification is currently planned for completion in December 1994. The second item is to determine why this issue was not identified during the initial development of the TRIP procedures.

The inspectors will continue to review these issues in the future. Overall, PECO Energy's response to this self-identified problem has been thorough and comprehensive. The use of the simulator to identify this deficiency is a strength at Limerick.

## 2.0 MAINTENANCE (62703)

### 2.1 Maintenance Observations

The inspectors reviewed the following safety-related maintenance activities to verify that repairs were made in accordance with approved procedures and in compliance with NRC regulations and recognized codes and standards. The inspectors also verified that the replacement parts and quality control used on the repairs were in compliance with PECO Energy's Quality Assurance (QA) program.

The inspectors observed work activities associated with Control Room Chiller 0B-K112. The maintenance personnel properly followed procedures and written instructions. Procedure M-090-004, Disassemble, Cleaning and Inspection of Control Room Chillers 0A-K112 and 0B-K112, was reviewed, along with Work Order C0152232, Replace Discharge Temperature Sensor. During the maintenance activities, the inspectors found the workers to be knowledgeable, and observed good supervisory oversight of the activities.

The quality of the work packages was good. The inspectors noted the use of a new work control package that used a binder (folders were previously used) to organize the work control documents for each activity. Each binder had tabs for such items as: work orders, individual work activities, clearances, data sheets, procedures, prints, and parts sheets. The inspectors considered the use of these binders a positive initiative. Additionally, feedback forms are provided with the packages to solicit the technicians' opinions on the new process. The inspectors discussed the use of the new binders with the technicians who stated that, while they are still getting use to them, they found the binders to be helpful.

### 2.2 Procedure Error Leading to ESF Actuation

I&C technicians performed a nuclear steam supply shutoff system (NSSSS) refuel floor high radiation surveillance test, ST 2-026-624-1 and failed to implement a step in the procedure that would have reset the existing isolation signal. As a result, block valve HV46-127 closed when its power was restored. The I&C technicians who carried out this surveillance test were fully qualified to perform the task. Immediate corrective actions were to reset the isolation and reopen the valve. No problems or abnormalities on pump seal instrumentation were detected.

At the conclusion of the inspection period, plant personnel had not completed their investigation of this event. This item will remain unresolved pending NRC review of PECO Energy's completed investigation, including the root cause of the event and corrective actions (50-352/94-12-02).

## 3.0 SURVEILLANCE (61726)

### 3.1 Surveillance Observations

During this inspection period, the inspectors reviewed in-progress surveillance testing and completed surveillance packages. The inspectors verified that the surveillances were completed according to PECO Energy approved procedures and plant technical specification requirements. The inspectors also verified that the instruments used were within calibration tolerance and that qualified technicians performed the surveillances.

The following surveillances were reviewed:

- ST-6-092-313-2, D23 Diesel Generator Slow Start Operability Test Run

The surveillance test observed was properly conducted by knowledgeable plant personnel, and was properly supervised by management.

- ST-6-049-1, RCIC Pump, Valve and Flow Test

On May 10, 1994, the inspectors observed the performance of ST-6-049-1, RCIC Pump, Valve and Flow Test, Revision 25. The inspectors noted that a test pre-brief was conducted with both personnel in the control room, and personnel in the RCIC room. HP coverage for the RCIC room was provided, as required, and an RWP was established to control access to the room. The inspectors verified that the surveillance was conducted in accordance with the approved PECO Energy procedure. The system manager made a temporary change to the procedure the morning of the test and all relevant personnel had the correct version. An operator in training was performing the steps of the procedure as part of his qualification and his actions were supervised by a licensed control room operator as required. The inspectors reviewed the completed test package and verified proper test completion and documentation.

- S49.1.D, RCIC System Full Flow Functional Test

This test was performed on May 12, 1994, to verify that the Unit 1 pump would not overspeed when started from a cold condition. The inspectors observed good management attention during the surveillance, which was completed without incident.

- ST-6-055-230-1, HPCI Pump, Valve and Flow Test

The HPCI surveillance was observed on May 23, 1994. The inspectors observed good coordination of the activities between the system manager and the operators.

## 4.0 ENGINEERING (71707)

### 4.1 Reactor Core Isolation Cooling (RCIC)

On May 2, 1994, the RCIC system manager noticed a low oil level in the Unit 1 RCIC pump, during a walkdown of the system. The pump was declared inoperable, approximately 1.5 quarts of oil were added, and the pump was inspected for leaks prior to declaring the pump operable again. No detectable leak was found, so monitoring of the oil level was increased. The inspectors were concerned that operations personnel had not identified the low oil level during their periodic tours through the area or checks of the pump, and consider this as a weakness in the thoroughness of the pump checks.

On May 4, 1994, during a pump cold, fast start for steam valve testing, the turbine tripped on mechanical overspeed, and the pump was declared inoperable. The setup process for the testing had taken longer than expected, and during that time, steam leaked past a valve and condensed in the turbine and governor valve. Plant personnel suspect that the water in the governor valve blocked a small port that caused a very short delay in governor valve response, which was enough to cause an overspeed condition. Additionally, the suspected oil leak from May 2 was identified as coming from an oil plug that was loose. The plug was tightened prior to the pump start. Two RCIC pump runs were successfully completed after the overspeed trip. The pump was maintained in an inoperable status pending further investigation. Another cold, fast pump start was conducted on May 5, to confirm operability after it was concluded that the water in the governor valve was the cause of the overspeed trip. The pump run was successful; however, a problem was identified with the barometric condenser vacuum system. Plant personnel initially suspected that the vacuum pump discharge check valve was sticking closed. This problem had been encountered in the past, so the valve was replaced during the refueling outage in February 1994. The pump was returned to an operable status because the barometric condenser vacuum system is not required to be operable; its function is to reduce local radiation levels by condensing small amounts of steam from gland seals, drains, and leakoffs that could otherwise enter the room.

On May 10, 1994, the Unit 1 RCIC system was run for a planned quarterly pump, valve and flow surveillance test. During the prestart checks, personnel identified that the barometric condenser vacuum pump separator tank water level was low. This was determined to be the cause of the vacuum system problems, and not the discharge check valve; therefore, this system was returned to service. During the surveillance test, operators had difficulty controlling the pump speed. Investigation identified loose linkage on the turbine governor valve. The valve was dismantled during the refueling outage in February. Apparently setscrews in the linkage nuts were not appropriately tightened, and the nuts loosened up causing play in the linkage. This affected operator control of the governor valve, and thus the speed control of the pump.

The loose governor valve linkage was corrected on May 11, 1994, and during the post-maintenance testing, the turbine tripped on overspeed. For this instance, plant personnel concluded that the cause of the overspeed was air in the hydraulic piston for the governor valve control. It is suspected that air was introduced into the piston during maintenance on the linkage due to excessive manipulation of the valve servo. A subsequent run of the pump was without incident. The pump was next retested on May 12, after it had cooled sufficiently so that a cold, fast start could be attempted. The start was successful, and the system was declared operable.

One of the lessons learned from the two overspeed trips was that after an activity that potentially affects the governor valve is conducted, the system should be initially run with a slow pump start.

On May 16, 1994, the inspectors identified that the Unit 2 RCIC oil sight glass is marked differently than the Unit 1 sight glass. The Unit 1 RCIC sight glass is marked with a normal range approximately 1/3 of the way from the top of the sight glass. The Unit 2 RCIC sight glass is marked similarly, but with the range approximately 1/3 of the way from the bottom of the sight glass. When the system manager was contacted concerning this difference, he indicated that operations personnel had made him aware of this difference and was currently investigating the reason for it; operators formally documented the apparent difference in the Performance Enhancement Program. However, he indicated that he had recently verified the Unit 1 sight glass markings as correct by measuring it compared to the recommended level in the pump. Later on May 16, the system manager concluded that the markings on the Unit 2 sight glass were incorrect, and that the sight glass may have been installed upside down; therefore, he initiated an action request to add oil to bring the level up to the appropriate level. Through discussions with the vendor, the system manager concluded that the pump is still operable with the oil level in the reduced condition. At the close of the inspection period, plant engineering personnel received formal concurrence from the pump manufacturer that the pump is operable with the reduced oil level.

On May 18, 1994, in the afternoon the inspectors brought to the attention of control room personnel that the Unit 2 RCIC pump oil level had not yet been brought up to the level requested by the system manager. Operations personnel added the appropriate amount of oil

to the system later that day. When questioned as to why it took more than 2 days to add oil to the system, plant personnel indicated that responsibility for adding the oil was not made clear, and that filtered oil was not readily available. The decision was made that in the future, operations personnel would be responsible for adding the oil. Additionally, the system manager was checking to confirm if filtered oil is required when adding oil.

The inspectors concluded that the overall plant staff's response to the problems associated with both RCIC systems could have been better. For Unit 1, the cause of the loose set screws was not determined at the close of this inspection period; this issue will remain unresolved pending NRC review of PECO Energy's investigation and corrective actions. (50-352/94-12-03)

For the Unit 2 RCIC system, the inspectors concluded that, although plant personnel concluded that the system was operable with the low oil level, the fact that it took over 2 days to add oil exhibits a weakness in the PECO Energy system to ensure that actions are taken in a timely manner to return a system oil level to the desired level.

## 5.0 PLANT SUPPORT (71707)

### 5.1 Radiological Protection

During the inspection period, the inspectors examined work in progress in both units including health physics (HP) procedures and controls, ALARA implementation, dosimetry and badging, protective clothing use, adherence to radiation work permit (RWP) requirements, radiation surveys, radiation protection instrument use, and handling of potentially contaminated equipment and materials.

The inspectors observed individuals generally frisking in accordance with HP procedures. A sampling of high radiation area doors was verified to be locked as required. Compliance with RWP requirements was reviewed during plant tours. RWP line entries were reviewed to verify that personnel provided the required information and people working in RWP areas were observed as meeting the applicable requirements.

### 5.2 Security

Selected aspects of plant physical security were reviewed during regular and backshift hours to verify that controls were in accordance with the security plan and approved procedures. This review included the following security measures: guard staffing, vital and protected area barrier integrity, and implementation of access controls including authorization, badging, escorting, and searches.

### 5.3 Emergency Preparedness

On May 11, 1994, plant personnel conducted a practice emergency drill. This drill was intended as a practice for the annual emergency exercise. The inspectors observed portions of the drill from the Emergency Operating Facility (EOF) in Coatesville, PA. Operations and briefings in the EOF were effective, and players were kept informed of plant status and progress during the exercise. The drill adequately met the goal of providing plant personnel with training for the annual exercise and potential plant events. The inspectors identified no deficiencies.

## 6.0 REVIEW OF LICENSEE EVENT AND ROUTINE REPORTS (90712, 90713)

### 6.1 Licensee Event Reports (LERs)

The inspectors routinely reviewed LERs and performed followup inspections to PECO Energy's actions regarding the disposition of corrective initiatives. The inspectors reviewed the following LERs and found that the events were described accurately, PECO Energy had identified the root causes, implemented appropriate corrective actions and made the required notifications.

LER 1-94-007, Refuel Floor Secondary Containment Isolation on Low Differential pressure due to a Severe Storm, Event Date: April 27, 1994, Report Date: May 23, 1994.

This event is discussed in NRC Combined Inspection Report 50-352, 353/94-11.

LER 2-94-003, Primary Containment and Reactor Vessel Isolation Control System (PCRVICS) Engineered Safety Feature Actuations resulting from a PCRVICS fuse which blew due to personnel error, Event Date: April 20, 1994, Report Date: May 20, 1994.

This event is discussed in NRC Combined Inspection Report 50-352, 353/94-11.

LER 2-94-004, Inadvertent automatic closure of Primary Containment Isolation Valves, ESF Actuations, due to a failed trip unit card that caused the control circuit fuse to blow, Event Date: April 22, 1994, Report Date: May 19, 1994.

This event is discussed in NRC Combined Inspection Report 50-352, 353/94-11.

LER 2-94-005, Failure to comply with Technical Specifications Section 3.7.7 in that a one hour firewatch inspection was not performed due to cognitive personnel error, Event Date: February 19, 1994, Report Date: May 31, 1994.

This event resulted in a non-cited violation as documented in NRC Combined Inspection Report 50-352, 353/94-11.

The inspectors found that the LERs listed above met the requirements of 10 CFR 50.73 and had no further questions regarding these events.

### 6.2 Routine Reports

Routine reports submitted by PECO Energy were reviewed to verify the reported information. The following report was reviewed and satisfied the requirements for which it was reported.

Station Monthly Operating Report for April, 1994, dated May 13, 1994.

## 7.0 FOLLOWUP OF PREVIOUS INSPECTION FINDINGS (92702)

(Closed) Violation (50-352/94-02-03). During the performance of a surveillance test (ST) on February 12, 1994, the 1B RHR shutdown cooling return valve (HV-051-1F015B) received an isolation signal on low reactor vessel water level. The isolation signal closed HV-051-1F015B, which resulted in the 1B RHR pump running without a flow path until discovered by operations approximately 18 minutes later. During that time reactor vessel water temperature increased from 79 to 81 degrees F. The I&C technician performing the ST performed a step on three occasions, which at the time was not recognized by him as part of the procedure. He apparently did not make any attempt to change the procedure or to determine what the problem was, but relied on the suggestion of the I&C foreman to correct the apparent procedure problem. The failure to execute a temporary change (TC), or revise the procedure to correct the discrepant condition was a violation of PECO Energy administrative procedures required by Technical Specification Section 6.8.1.

The I&C technician involved in this event was counseled on the importance of complying with procedures and performing adequate self-check, the importance of fully understanding unexpected responses prior to proceeding with an activity, and the importance of using a TC when a procedural discrepancy is identified. The I&C supervisor involved in this event was counseled on the importance of proper communication to ensure complete understanding of the task being performed prior to giving technical guidance. The ST (ST-2-036-704-1) was changed to incorporate human factor enhancements. The previous procedure called for the technician to rotate the STABLE CURRENT adjustment counterclockwise, which was turned clockwise by mistake. The new procedure calls for the STABLE CURRENT adjustment to be rotated until 20 ma is indicated on the Rosemount Readout CAL CURRENT display. Similar Unit 1 and Unit 2 I&C procedures are being reviewed for the incorporation of comparable human factor enhancements. Additionally, an I&C group all-hands meeting was held to discuss this event to emphasize the importance of procedural compliance, and proper self-check and attention to detail.

The inspectors assessed that PECO Energy's review of, and corrective actions for, this event were adequate; this item is closed.

## 8.0 MANAGEMENT MEETINGS

### 8.1 Exit Interviews

The inspectors discussed the issues in this report with PECO Energy representatives throughout the inspection period, and summarized the findings at an exit meeting with the Plant Manager, Mr. R. Boyce, on June 6, 1994. PECO Energy personnel did not express any disagreement with the inspection findings. No written inspection material was provided to licensee representatives during the inspection period.

### 8.2 Additional NRC Inspections this Period

A Region-based inspection was conducted during this inspection period. Inspection results were discussed with senior plant management at the conclusion of the inspection.

| Date | Subject | Inspection No. | Lead Inspector |
|---|---|---|---|
| 5/27/94 | Rosemount Transmitter | 50-352/94-13<br>50-353/94-13 | L. Scholl |