U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/93012(DRP); 50-455/93012(DRP)

Dockets No. 50-454; 50-455 Licenses No. NPF-37; NPF-66

Licensee: Commonwealth Edison Company
Executive Towers West III
1400 Opus Place
Downers Grove, IL 60515

Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Site, Byron, Illinois

Inspection Conducted: July 7 through September 30, 1993

Inspectors: H. Peterson
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Approved By: Martin J. Farber 10/25/93
Martin J. Farber, Chief Date
Reactor Projects Section 1A

Inspection Summary

Inspection from July 7 through September 30, 1993 (Reports No. 50-454/93012(DRP); 50-455/93012(DRP)).
Areas Inspected: Routine, unannounced safety inspection by the resident inspectors of previous inspection findings, operational safety verification, onsite event follow up, material condition, housekeeping and plant cleanliness, radiological controls, security, safety assessment/quality verification, maintenance activities, surveillance activities, engineering and technical support, and refueling activities.

Results: Of the twelve areas inspected, two violations, one non-cited violation, and two inspection followup items were identified. The violations pertained to failure to follow procedures (paragraph 3b). The non-cited violation pertained to minor security concerns (paragraph 3f). The inspection followup items pertained to engineering and technical support. The following is a summary of performance during this inspection period:

Plant Operations

Overall, performance in this area continues to be good. During this inspection period, several operational events occurred, including a Generating Station Emergency Plan (GSEP) Unusual Event associated with complete loss of commercial and emergency telephone communications. The licensee's response to this event was excellent.

Three operational personnel errors occurred during this period. One particular incident resulted in an inadvertent initiation of Safety Injection. Another personnel error resulted in a significant safety hazard to personnel in the affected area. These incidents and one other example of a personnel error resulted in a violation of NRC requirements (paragraph 3b).

Radiological controls continue to be good. In evaluating radiation protection goals, the number of personnel contamination events and total personnel exposure were below the projected values during this inspection period.

Security continues to be generally good; however, a non-cited violation was identified concerning minor incidents which violated the station's security plan (paragraph 3f).

Safety Assessment/Quality Verification

Performance in this area remains good. The inspectors reviewed the On-Site Quality Verification (SQV) program during the refueling outage. The SQV department initiated 24 hour coverage during the outage. Station management continues to give high regard to the findings and recommendations identified by the SQV organization. On the other hand, recurrence of administrative errors in the review, distribution, and control of documents, went unidentified and uncorrected for several years.

Maintenance and Surveillance

Performance in this area was satisfactory; however, personnel errors pertaining to failure to follow procedures resulted in three operational events (paragraph 3b).

Engineering and Technical Support

Performance in this area was good. The inspectors observed portions of the Integrated Leak Rate Testing (ILRT) and the Erosion/Corrosion testing programs and considered both programs to be good. The licensee identified two engineering concerns, specifically pressurizer anomalies and differences between Technical Specifications and Westinghouse recommendations. The inspectors are monitoring the engineering department's progress on these two items as an inspection followup item (paragraph 7).

note completion of one of the required test procedures and left the item blank on the work request. Then, a Senior Reactor Operator performed an inadequate review of the package and incorrectly signed the package as complete.

The licensee initiated a root cause analysis on the SPPs and LCOARs deficiencies. The indepth root cause analysis was performed utilizing a multi-disciplined investigation team. The results of the analysis indicated specific procedural problems. These problems included no formal procedural guidance, a lack of written communication control, and lack of supervisory methods for controlling these types of documents. The root cause analysis specifically outlined corrective actions for each causal factor.

This incident and the administrative control deficiencies related to the SPPs and LCOARs are examples of inadequate procedural adherence to Byron Administrative Procedures (BAP 1210-1 Attachment A.3, "Review of Special Procedures/Tests/Experiments"; BAP 1310-8, "Special Procedures/Test/Experiments"; BAP 1400-6, "Technical Specification Limiting Condition for Operation Action Requirements"; BAP 1600-11A.1, "NWR Testing Requirements") and the requirements of Technical Specification (TS) Section 6.8, "Procedures and Programs." Therefore, this is a violation (454/455-93012-01(DRP)). In view of the licensee's corrective actions, this violation does not require a written response. This unresolved item is closed.

b. (Closed) Inspection Followup Item 454/455-93010-01 (DRP): This item concerned an apparent non-conservative policy in making emergency declarations, identified during the June 7, 1993, licensed operator requalification examination. The inspectors interviewed licensed operators and discussed the issue with the training department. Associated lesson plans were reviewed. Overall, the station operating and training departments adequately stressed that anytime any value is exceeded pertaining to an Emergency Action Level, the appropriate classification shall be made. This item is considered closed.

c. (Closed) Violation 455-91022-01 (DRS): This item concerns the failure to adequately take data during the performance of the Integrated Leak Rate Testing (ILRT) on Unit 2 containment. During the Unit 2 refueling outage on September 14, 1991, ILRT hourly data was not recorded from 2000 hours until 2114 hours. The reason for the problem was that power supply to the ILRT equipment was inadvertently de-energized. During the September 1993, Unit 2 refueling outage, the inspectors reviewed and observed the performance of the Unit 2 containment ILRT. The licensee enhanced the ILRT procedure; including new computer software, data recording every 15 minutes, and ensuring operations awareness of the test by enforcing a tagout protection on the power supply for

the ILRT equipment. Overall, the ILRT results were satisfactory, and the test was conducted by the engineering personnel in an excellent manner. This item is considered closed.

One violation was identified.

3. Plant Operations

Unit 1 operated at power levels up to 100% in the load following mode throughout the report period.

Unit 2 operated at reduced power levels for plant end of life coastdown in preparation for the refueling outage. On September 2, 1993, a reactor shutdown commenced for the planned 60 day refueling outage. The reactor was shutdown at 4:41 a.m. on September 3, 1993.

a. Operational Safety Verification (71707, 93702)

The inspectors verified that the facility was being operated in conformance with the licenses and regulatory requirements, and that the licensee's management control system was effectively carrying out its responsibilities for safe operation.

On a sampling basis, the inspectors verified proper control room staffing and coordination of plant activities; verified operator adherence with procedures and TSs; monitored control room indications for abnormalities; verified that electrical power was available; and observed the frequency of plant and control room visits by station management.

Overall, the licensee's awareness of plant safety continues to be good. During this inspection period, three personnel errors, due to the failure to follow procedures and lack of attention to detail, were identified during the performance of maintenance and surveillance activities. These errors are discussed in detail in paragraph 3b. Extensive corrective actions and root cause analyses have been initiated to prevent recurrence of personnel errors.

The inspector observed a fire drill associated with a simulated warehouse fire in the protected area on August 5, 1993. This was a complete activation of fire brigade personnel and equipment. The fire brigade response was very quick. All personnel donned fire fighting gear and participated in actual pressurization and use of fire hoses. The drill was an excellent training aid and overall performance was good.

b. Onsite Event Follow-up (93702)

Inadvertent Safety Injection Actuation

On September 5, 1993, during the performance of 2BOS 3.2.1.1.a-1, "Unit Two Train A Manual Safety Injection Initiation and Manual Phase A Initiation Surveillance," an inadvertent safety injection (SI) occurred. It was identified that during the restoration of train B solid state protection system, the nuclear station operator (a licensed reactor operator) placed the train B multiplexer test switch in the inhibit position, instead of placing the input error inhibit switch in the inhibit position, as required by the procedure. When the subsequent step was performed, placing the train B mode selector switch to operate, a SI signal was initiated due to permissive P-11 signal not being present. At the time of the event, the reactor was shutdown for the refueling outage and reactor coolant system was at 140°F and 350 psig. As a result of this event, pressurizer level increased approximately 10% (an indication of approximately 1200 gallons injected), and reactor coolant system pressure increased approximately 50 psig (from 350 to 400 psig). During the event, no relief valves were actuated and one train of residual heat removal in shutdown cooling remained operating. All systems responded as expected.

After further review, it was identified that the operator performing the surveillance test failed to follow the surveillance procedure. Step 1.58, parts a, b, and c of this procedure require an independent verification after each part. Had the proper independent verification been performed, the verifier could have identified that the wrong switch was manipulated and could have prevented the event.

Loss of Unit 2 Instrument Buses 211 and 213

On September 7, 1993, while performing electrical preventive maintenance on inverter 211 for instrument bus voltage adjustment, actions were taken to swap instrument bus 211 power supply. Buses 211 and 213 were initially powered from their respective constant voltage transformer (CVT). When directed to shift instrument bus 211 to its main power source (inverter), the operator incorrectly transferred bus 213 to its main feed inverter, which was out of service. Not realizing the mistake, the operators then de-energized bus 211 CVT. This caused the loss of both instrument buses 211 and 213. Operators responded to the event, and identified that both source range nuclear instruments (NI) had de-energized. Appropriate actions were taken for source range LCOAR 2BOS 3.1-1a, and abnormal operating procedure for the loss of instrument buses, ELEC-2. Buses 211, 213, and both source range NIs were re-energized. The licensee initiated an investigation encompassing personnel error, adherence to procedures, and human factor concerns.

Wrong CO_2 Fire Protection System Train Actuation

On September 10, 1993, the Electrical Maintenance department was performing fire protection test 2BHS 7.10.3.2.b.1-7, "Low Pressure CO_2 System Actuating 18 Month Surveillance," in the Unit 2 lower cable spreading room zone 2S-46. All precautionary steps were taken prior to actuation of CO_2; however, due to failure to follow procedures and a lack of attention to details, the wrong lower cable spreading room zone (2S-45) CO_2 system was manually actuated. The technicians attempted to terminate the injection, but CO_2 discharged into the room. A potential personnel injury was associated with this event. There was a firewatch located inside room 2S-45; however, the warning alarm prior to CO_2 injection allowed the individual to exit the room and no personnel injury occurred.

The three preceding incidents are examples of errors in failing to adequately follow procedures. This is a violation of 10 CFR 50, Appendix B, Criterion V (50-454/455-93012-02 (DRP)).

GSEP Unusual Event

On July 28, 1993, at 10:22 a.m., an Unusual Event (UE) was declared based on Byron's Generating Station Emergency Plan (GSEP), Emergency Action Level 3C, "Loss of Commercial Telephone Communications, NARS, HPN, and ENS." The licensee made its initial State, local, and NRC notifications utilizing the dedicated microwave communications link to the load dispatcher's office. All notifications were made within the required regulatory time limits. Subsequently, the licensee established a continuous open communications link with the NRC Headquarters Operations Center utilizing the microwave communications system and tieing it to an outside long distance operator. An additional communication link was established by utilizing the Station Manager's cellular phone.

It was later identified that a fiber optic communications line at an outside telephone switching station had been accidentally cut. After verifying that all phone communication systems were permanently repaired and operating satisfactorily, the license terminated the emergency event at 2:47 a.m., on July 29, 1993. Considering the uniqueness and difficulty associated with the lack of normal communications, the control room licensed operators and emergency planning personnel performed their GSEP responsibilities in an excellent manner.

Stuck Control Rod During Reactor Shutdown

At 3:20 a.m., on September 3, during the Unit 2 reactor shutdown, control rod C-5 of shutdown bank D failed to insert past the transition position indication, resulting in a rod misalignment with the other three rods of bank D. The licensee entered

abnormal procedure 2BOA ROD-3, "Dropped or Misaligned Rod." Blown fuses for the lift coil of rod C-5 were identified and replaced. Proper precautionary steps were taken prior to attempting to move the affected rod. At 4:40 a.m., rod C-5 was satisfactorily restored to operation and inserted to its rod bottom position.

The inspectors questioned the cause of the blown fuse and the fuse replacement program for the control rod drive (CRD) system. The inspectors determined that fuses associated with the CRD stationary and moveable gripper circuits were replaced every other refueling outage. Unit 1 fuses had been replaced in March 1993 during the last refueling outage. Unit 2 fuses had been replaced during its last refueling outage in April 1992. The investigation as to the cause of the blown fuse was inconclusive; however, the fuse control program for the CRD system appeared adequate. Overall, the station operators responded quickly and performed the required actions of the abnormal procedures in an excellent manner.

c. Current Material Condition

The inspectors performed general plant walkdowns, as well as, selected system and component walkdowns to assess the general and specific material condition of the plant, to verify that Nuclear Work Requests (NWRs) had been initiated for identified equipment problems, and to evaluate housekeeping. Walkdowns included an assessment of the buildings, components, and systems for proper identification and tagging, accessibility, fire and security door integrity, scaffolding, radiological controls, and any unusual conditions. Unusual conditions included but were not limited to water, oil, or other liquids on the floor or equipment; indications of leakage through ceiling, walls or floors; loose insulation; corrosion; excessive noise; unusual temperatures; and abnormal ventilation and lighting.

Considering that Unit 2 was in a refueling outage, the general material condition inside containment was considered satisfactory. Some areas of clutter, loose tools and equipment, and oil spilled from the steam generator snubber maintenance were observed. The atmosphere and humidity within the containment were properly regulated to ensure safe working conditions.

d. Housekeeping and Plant Cleanliness

The inspectors monitored the status of housekeeping and plant cleanliness for fire protection and protection of safety-related equipment from intrusion of foreign matter. In general, housekeeping and plant cleanliness has improved.

In the Unit 2 containment, even with the outage, the housekeeping and cleanliness condition are satisfactory; however, there are some areas of clutter and foreign material which will require extensive cleanup efforts at the conclusion of the outage.

e. Radiological Controls

The inspectors verified that personnel were following health physics procedures for dosimetry, protective clothing, frisking, posting, and randomly examined radiation protection instrumentation for operability and calibration.

During a tour of the 346 feet elevation of the auxiliary building, the inspectors discovered a gum wrapper, a piece of gum in the waste gas decay valve aisle, and cigarette butts under the waste gas decay tanks. These items were brought to the attention of the radiation protection personnel. The items were removed and plant management re-emphasized proper radiological controls to all site personnel.

Overall, radiological controls continue to be good. Radiation protection personnel continue to be very responsive to the needs of the plant. In evaluating radiation protection goals, the number of personnel contamination events and total personnel exposure were below the projected value during the inspection period.

f. Security

Each week during routine activities or tours, the inspectors monitored the licensee's activities to ensure that observed actions were being implemented according to the approved security plan. The inspectors noted that persons within the protected area displayed proper photo-identification badges and those individuals requiring escorts were properly escorted except as discussed below. The inspectors also verified that vital areas were locked and alarmed. Additionally, the inspectors also observed that personnel and packages entering the protected area were searched by appropriate equipment or by hand.

On Wednesday, September 15, 1993, the inspectors identified that a visitor was not in immediate visual contact with his escort. The inspectors accompanied him until his escort was located. Followup investigation by the security department found that the escort and visitor had been separated for approximately two to three minutes after a roll-up door was closed between them.

During a followup tour with a security officer and a contract crew foreman the next day, the inspectors discovered an individual within the protected area who was not wearing his security badge. The individual had removed his shirt, with the badge attached, and hung it off a piece of scaffolding in the area.

On September 2, 1993, an individual failed his Nuclear General Employee Training (NGET) requalification training. According to Byron administrative procedures, his access to the plant should be suspended. However, the training department did not communicate the failure to the security department and on September 7, the individual was allowed access into the station. The corrective actions included formalizing communications between the training and security department, and changing the appropriate procedures such that the training department will immediately call security and inform them of personnel failing NGET requalification.

During the month of September, two incidents of issuance of wrong security badges were identified by the licensee. One incident was immediately corrected at the badge receipt window. On September 15, another error in issuing a security badge took about two hours to identify. In both events, the administrative security procedure, which required the positive identification of badges prior to issuance, was not rigorously followed. The licensee's security department took immediate and extensive corrective actions following the September 15 event, including individual disciplining.

The above four items are isolated events with little or no safety significance, and corrective actions were immediate and appropriate. Additionally, the security department has initiated the development of a training video concentrating on administrative security issues, such as visitor escorting practices and badge receipt responsibilities. It was determined that these events meet the criteria outlined in 10 CFR Part 2, Appendix C, Section VII.B, and therefore are considered a non-cited violation of station administrative security procedures.

One violation and one non-cited violation were identified.

4. Regional Request (92701)

Temporary Instruction 2500/028 "Employee Concerns Program"

The inspectors verified the licensee had implemented an employee concerns program to provide an alternate path from normal line management to raise safety concerns. The specific characteristics of this program and an evaluation of its effectiveness is described on the attached form (Attachment 1). This temporary instruction is considered closed.

NRC Technical Training Center (TTC) Information Request

The NRC TTC requested updated information pertaining to Westinghouse 4-loop plants. The request was in the form of a questionnaire. The inspectors requested the licensee supply specific information associated with the questionnaire. The licensee's response was timely and thorough.

Action Item Request on Post-Fire Shutdown Procedures

NRC Headquarters Office of Nuclear Reactor Regulation (NRR) identified cases where abnormal operating procedures for achieving and maintaining safe shutdown from outside the control room instructed the operators to isolate both onsite and offsite electrical power sources. While power to the station is isolated, operators reconfigure shutdown systems and isolate electrical circuits that could cause spurious signals and prevent safe shutdown capability. To conduct a detailed study to determine how many plants take this approach and assess the potential risk, copies of plant post-fire shutdown procedures and management of onsite and offsite power sources were requested. The inspectors identified the following pertinent procedures at the Byron station:

- BCA-0.0, "Loss of All AC Power,"
- BOA-ELEC-1, "Loss of DC Buses,"
- BOA-ELEC-2, "Loss of Instrument Bus," and
- BOA-ELEC-4, "Loss of Offsite Power for Modes 3 or 4."

No violations or deviations were identified.

5. Safety Assessment/Quality Verification (40500, 90712, 92700)

During this inspection period, the inspectors evaluated the scope and effectiveness of the On-Site Quality Verification (SQV) program during the refueling outage. This included the review of the SQV Shutdown Risk Assessment Report for Byron Station Refuel Outage B2R04. This report was an independent evaluation of shutdown risk for the planning and scheduling portion of the refueling outage.

SQV made eleven recommendations to the station work planning department. Three recommendations dealt with equipment availability, administrative controls, and plant conditions tied to minimizing risk associated with loss of decay heat removal. Two recommendations dealt with enhancements to minimize risk associated with loss of reactor coolant system inventory. Three recommendations dealt with issues associated with activities impacting loss of AC power. These items particularly enhanced the work activities associated with the diesel generator work and the system auxiliary transformer work. The remaining three recommendations dealt with administrative controls. All recommendations were appropriately accepted and resolved.

In addition to the shutdown risk review, the inspectors periodically monitored the SQV evaluators on daily field monitoring report (FMR) inspections. During the month of August, SQV generated 66 FMRs. In the month of September, the SQV department generated 251 FMRs by providing 24 hour coverage of activities related to the refueling outage. The resident inspectors are evaluating a sample of these FMRs and their resolution to assess the effectiveness of the process.

INPO Assistance Visit

On August 9 through 13, 1993, an INPO inspection team conducted an evaluation of licensee's corrective actions associated with the June 1992 INPO evaluation. This assistance visit was requested by the station management to conduct followup inspection, and to evaluate the Byron excellence review team trending and the integrated reporting programs. The team consisted of three INPO evaluators, a peer evaluator from Crystal River station and a Byron in-house peer evaluator. No major concerns were identified during this visit.

No violations or deviations were identified.

6. Maintenance/Surveillance (62703, 61726)

a. Maintenance Activities (62703)

Station maintenance activities were routinely observed and/or reviewed to ascertain whether they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards, and in conformance with technical specifications.

The following items were also considered during this review: approvals were obtained prior to initiating the work; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; and activities were accomplished by qualified personnel.

Portions of the following maintenance activities were observed and reviewed:

- NWR-B04196 - Replace diodes on Unit 2 Turbine Driven Auxiliary Feedwater Pump,
- 2CV8523B - 2B CV MB Demin Resin Fill/Flush Gearbox Assembly Repair,
- NWR-B03393- 1PR013J- Check Source Repair on RM-11,
- SPP 93-049 - Damaged Fuel Assembly Manipulation,
- NWR-B03525 - Loading Damaged Fuel Assembly,
- BFP FH-21T2 - Shipping Container Inspection Checklist,
- NWR-B03822-1B Feed Pump Low Pressure Governor Valve Oscillation, and
- Unit 2 Low Pressure Turbine Disassembly and Inspection.

During the last refueling outage in April 1993, the Unit 1 upper internal and fuel assembly misalignment resulted in damage to one new fuel assembly and guide pins. The inspectors observed the coordination between operations, fuel handlers, maintenance, and radiation protection personnel during the handling of the damaged new fuel assembly in preparation for shipment to Westinghouse Electric Corporation. Overall, the fuel handling and shipping activities were well managed.

b. Surveillance Activities (61726)

During the inspection period, the inspectors observed TS required surveillance testing and verified that testing was performed in accordance with applicable procedures, that test instrumentation was calibrated, that results conformed with TSs and procedure requirements and were reviewed, and that any deficiencies identified during the testing were properly resolved.

The inspectors witnessed portions of the following surveillances:

- 2BHS-XLT-1 - Limitorque Valve Operator Signature on Valve 2SX007,
- 1A Diesel Generator (DG) Monthly Operability Surveillance,
- New Fuel Receipt Inspection,
- 2BOS 9.4-1 - Unit 2 Containment Building Penetration to Outside Atmosphere Weekly Surveillance, and
- 2A DG 18 Month Surveillance/Maintenance.

Review of 2BOS 9.4-1, performed during the core refueling, showed that the surveillance was performed as required and that all requirements were met. Specifically, there were no paths to the outside atmosphere and the fuel handling building ventilation could maintain at least a negative 0.25 inches water pressure in the building.

During the 2A DG post surveillance/maintenance run, a problem was identified with a ground fault trip calibration. Engineering determined that the trip had been set non-conservatively; however, this trip mechanism was not used or required during emergency operation of the diesel. Following calibration, the diesel post-maintenance run proceeded to go smoothly both in the control room and in the diesel room. Adequate personnel were available to ensure all necessary parameters were observed and adjustments completed.

No violations or deviations were identified.

7. Engineering & Technical Support (37700)

Information Notice 93-33, "Potential Deficiencies of Certain Class 1E Instrumentation and Control Cables"

Byron station performs systematic reviews of all industry operating experience including information notices (IN), bulletins, INPO information, and vendor information. The majority of the followup responsibilities have been recently assigned to the individual sites. Issues of generic concerns are assigned to the corporate regulatory organization, while the individual sites perform parallel reviews.

The inspectors performed a review of licensee's actions associated with IN 93-33. Site engineering, in conjunction with corporate, had reviewed the EQ aspects of electrical cabling and had concluded that Byron's cables were tested and installed per IEEE Std 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations." The corporate staff is participating in an industry group, called the Nuclear Utility Group on Equipment Qualification (NUGEQ), associated with EQ.

Discrepancy on Scheduled Removal of Irradiated Reactor Vessel Sample Capsules

On September 3, 1993, the inspectors became aware of a potential problem associated with the TS scheduled removal of reactor vessel material irradiation surveillance specimens.

In preparing for the removal of the irradiated surveillance specimen, the licensee discovered that the specimen capsule removal schedule in TS Table 4.4-5 was inconsistent with Westinghouse Commercial Atomic Power (WCAP) documents. The WCAP document recommended a revised schedule for future capsule removals based on the latest specimen analyses. TS Table 4.4-5 accurately reflected the original WCAP recommendations; however, after the first refueling outage, the TS table was not updated in accordance with WCAP revised recommendations.

Westinghouse and site engineering have discussed the inconsistency in the specimen removal for Unit 1. They determined that the specimen which was removed in accordance with the TS table can be used to make the necessary predictions required of the reactor vessel radiation surveillance program. Therefore, there are no concerns involving Unit 1 reactor vessel operability.

For Unit 2, Westinghouse has concluded that either the specimen required by the TS table or the specimen recommended by the WCAP document could be pulled during this refueling outage to satisfy the surveillance program.

Although there are no immediate operability concerns on the reactor vessels, the inspectors will follow the licensee's action to address the necessary changes to the TS or the WCAP document. This item is considered as an inspection followup item (454/455-93012-03 (DRP)).

Pressurizer Transients

Two pressurizer transients occurred during the Unit 2 shutdown, which initiated followup activities by the engineering department.

On September 3, 1993, while shutting down Unit 2, the Digital Electro-Hydraulic Control (DEHC) system induced a main turbine transient causing pressurizer pressure to decrease to less than 2219 psig, the departure from nucleate boiling (DNB) limit. The operators immediately entered the LCOAR 2BOS 2.5-1a, "DNB Parameters," and within 5 minutes restored pressurizer pressure to above 2219 psig. A mismatch in the DEHC reference and reference demand caused a load increase from 160 to 180 megawatts. This secondary transient caused pressurizer pressure to decrease. The thermal system engineering department is evaluating this transient.

On September 5, 1993, while Unit 2 was in Mode 5 with reactor coolant temperature at approximately 125°F, pressurizer vapor space temperature at approximately 400°F, and pressurizer liquid space at approximately 128°F, the 2D reactor coolant pump was started. After the pump was started, the pressurizer vapor space and liquid space temperatures equalized at approximately 320°F. The subsequent cooldown resulted in rapid temperature decrease to approximately 128°F. No TS limit was violated and the pressurizer cooldown limit of 200° per hour was not exceeded; however, questions exist on proper control of pressurizer cooldown. The site engineering department was also tasked to evaluate this transient. These two items are considered an inspection followup item (454/455-93012-04 (DRP)).

Erosion/Corrosion Program Observation (49001)

During the Unit 2 refueling outage, the inspectors discussed the erosion/corrosion program with site engineering personnel and conducted a walkdown of outage related program activities. Interviews with engineers responsible for program implementation and field personnel performing the testing indicated that personnel were qualified and proper attention was being given to piping replacement. The program appeared to meet all requirements and was considered proactive in the testing of small bore piping. The licensee continued to have an aggressive erosion/corrosion investigation program.

Two inspection followup items were identified.

8. Refueling Activities (60710)

During the refueling outage, the inspectors observed the licensee's fuel handling operations, including the receipt and storage of new fuel; and discussed refueling operations with plant operators and fuel handling personnel. The licensee used approved procedures for fuel accountability and movements. Communications between the control room and fuel handlers were effective. The inspectors witnessed fuel handling operations from the control room, in the fuel building, and in containment.

The refueling activities were initiated and are being completed on schedule, and are proceeding in accordance with the plan and requirements. The submerged cameras were a great help in ensuring rods or assemblies were not attached to the upper internals. Activities prior to and during vessel internals removal were satisfactory.

During the core offload, a gear failed in the transfer mechanism of the fuel transfer cart. The fuel transfer canal was required to be drained to initiate repairs. All proper radiological precautions were taken and only one minor personnel contamination occurred within this highly contaminated area. The licensee's response and repair activities were excellent.

No violations or deviations were identified.

9. Report Review

During the inspection period, the inspector reviewed the licensee's Monthly Performance Reports for July and August 1993. The inspectors confirmed that the information provided met the requirements of Technical Specification 6.9.1.8 and Regulatory Guide 1.16.

The inspector also reviewed the licensee's Monthly Plant Status Reports for July and August 1993.

No violations or deviations were identified.

10. Inspection Followup Items

Inspection followup items are matters which have been discussed with the licensee, which will be reviewed by the inspector and which involve some action on the part of the NRC, licensee or both. Two inspection followup items were identified during the inspection and are discussed in paragraph 7.

11. Non-Cited Violations

Non-cited violations are violations for which a "Notice of Violation" will not be issued. The NRC uses the "Notice of Violation" as a standard method of formalizing the existence of a violation of legally binding requirement. However, because the NRC wants to encourage and

support licensee's initiatives for self-identification and correction of problems, the NRC will not generally issue a "Notice of Violation" for a violation that meets the tests of 10 CFR Part 2, Appendix C, Section VII.B. A non-cited violation was identified during this inspection and is discussed in paragraph 3.

12. Meetings and Other Activities

a. Management Meetings (30702)

On July 29-30 and September 15, 1993, Mr. Martin J. Farber, NRC Region III Section Chief, toured the Byron plant and met with licensee management to discuss plant performance, plant material condition, and recent personnel errors.

On September 22-23, 1993, Mr. Ramin Assa, NRR Licensing Project Manager for Braidwood Station, toured the Byron plant and met with licensee management for backup site coverage and observation.

b. Management Visit by International Nuclear Industry Representatives (30702)

Representative from Hungary

One Hungarian representative, from the Nuclear Power Plant (NPP) Paks, visited Byron station during the week of August 16, 1993. He was in this country on an International Atomic Energy Agency sponsored scientific information visit that included some labs and other NPPs. The purpose of the visit was to review high-technology maintenance practices and methods.

Representative from Great Britain

The Assistant Outage Manager for Sizewell B, a United Kingdom Central Electricity Generating Board Power Plant, arrived at the Byron station on September 4, 1993, for approximately three weeks. The purpose of the visit was to observe outage planning and implementation during the refueling outage.

c. Exit Interview (30703)

The inspectors met with the licensee representatives denoted in paragraph 1 during the inspection period and at the conclusion of the inspection on September 30, 1993. The inspectors summarized the scope and results of the inspection and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.

Attachment: Employee Concerns Programs

Attachment 1

EMPLOYEE CONCERNS PROGRAMS

PLANT NAME:		Licensee:		DOCKET #:	
	LaSalle		CECO		50-373/374
	Dresden		CECO		50-237/249
	Quad Cities		CECO		50-254/265
	Byron		CECO		50-454/455
	Braidwood		CECO		50-456/457
	Zion		CECO		50-295/304

NOTE: Please underline yes or no if applicable and add comments in the space provided.

A. PROGRAM:

1. Does the licensee have an employee concerns program? (Yes or No/Comments)

   The licensee conducts a Quality First program to identify and address employee concerns. Other programs such as the vision through quality (VQ) search for opportunity (SFO) exist. The VQ SFO program is more oriented toward identifying and developing improvement initiatives versus a formal program for raising specific safety issues. Therefore, the completion of this form will deal only with the QF program.

2. Has NRC inspected the program? Report #_____

   The NRC had not recently inspected this program.

B. SCOPE: (Circle all that apply)

1. Is it for:

   a. Technical? (Yes, No/Comments)

   b. Administrative? (Yes, No/Comments)

   c. Personnel issues? (Yes, No/Comments)

   The concerns are categorized as security, quality, and management but may, in fact, involve any of the above.

2. Does it cover safety as well as non-safety issues? (Yes or No/Comments)

3. Is it designed for:

   a. Nuclear safety? (Yes, No/Comments)

   b. Personal safety? (Yes, No/Comments)

   c. Personnel issues - including union grievances? (Yes or No/Comments)

      Although it can involve personnel issues, it does not deal with union grievances.

4. Does the program apply to all licensee employees? (Yes or No/Comments)

5. Contractors? (Yes or No/Comments)

   This program is not necessarily stressed to contract employees the licensee believes are not in a position to identify Quality First issues such as parking lot pavers.

6. Does the licensee require its contractors and their subs to have a similar program? (Yes or No/Comments)

   CECo administers the entire program.

7. Does the licensee conduct an exit interview upon terminating employees asking if they have any safety concerns? (Yes or No/Comments)

   Upon termination, employees are given concern disclosure statements to complete. Exit interviews are given. The percentage of terminating employees receiving them is drastically reduced due to a reduction in program manpower since the beginning of the year.

C. INDEPENDENCE:

1. What is the title of the person in charge?

   Quality First Administrator (QFA)

2. Who do they report to?

   Director of Station Quality Verification

3. Are they independent of line management?

   Yes - Reports through offsite quality verification organization

4. Does the ECP use third party consultants?

   No - However, quality verification personnel have been utilized to do interviews. The QFA determines the appropriate group to do the investigation.

5. How is a concern about a manager or vice president followed up?

   This would be decided on a case by case basis.

D. RESOURCES:

1. What is the size of staff devoted to this program?

   Since the beginning of the year, staff has been cut to one individual for all six CECo plants.

2. What are ECP staff qualifications (technical training, interviewing training, investigator training, other)?

   No specific qualifications exist for the QFA, who has been involved in the program a number of years. Guidelines for interviewers are available but there are no specific qualifications.

E. REFERRALS:

1. Who has followup on concerns (ECP staff, line management, other)?

   The QFA may do the followup himself or assign it to another group including line management.

F. CONFIDENTIALITY:

1. Are the reports confidential?
   (Yes or No/Comments)

2. Who is the identity of the alleger made known to (senior management, ECP staff, line management, other)?

   Information on the alleger identity remains with QFA.

3. Can employees be:

   a. Anonymous? (Yes/No Comments)

   b. Report by phone? (Yes, No/Comments)

      A toll free number is available.

G. FEEDBACK:

1. Is feedback given to the alleger upon completion of the followup? (Yes or No - If so, how?)

   Feedback is given by mail or telephone.

2. Does program reward good ideas?

   No

3. Who, or at what level, makes the final decision of resolution?

   This is determined by QFA in conjunction with line management.

4. Are the resolutions of anonymous concerns disseminated?

   No

5. Are resolutions of valid concerns publicized (newsletter, bulletin board, all hands meeting, other)?

   No

H. EFFECTIVENESS:

1. How does the licensee measure the effectiveness of the program?

   Not measured

2. Are concerns:

   a. Trended? (Yes or No/Comments)

      There are too few official "Records of Concern" (ROC) to warrant trending. The QFA does informally look for common concerns on items which do not warrant official ROCs.

   b. Used? (Yes or No/Comments)

      Corrective actions are addressed in the program.

3. In the last three years how many concerns were raised? Closed? What percentage were substantiated?

   The QAF screens comments and identifies those to be handled as official Records of Concern" (ROC).

   The following data is for ROCs from 1990 through August 1993. No formal ROCs have been initiated thus far in 1993.

	#Closed	%Substantiated
LaSalle	2	100
Byron	9	22
Braidwood	6	33
Quad Cities	3	33
Dresden	4	25
Zion	1	0

Comments received during or after a refuel outage that the QAF determines do not warrant an official ROC are compiled and transmitted to plant management for information. This occurs several months after the outage.

4. How are followup techniques used to measure effectiveness (random survey, interviews, other)?

   No followup techniques utilized except perhaps for contractors they see multiple times at different CECo sites.

5. How frequently are internal audits of the ECP conducted and by whom?

   There are no audits of this area. The onsite quality verification superintendent is responsible for reviewing information copies of quality ROCs to determine if additional QA reviews are warranted.

I. ADMINISTRATIVE/TRAINING:

1. Is ECP prescribed by a procedure? (Yes or No/Comments)

   Nuclear Operations Directive (NOD)-OA.12, "Quality First Program Directive"

2. How are employees, as well as contractors, made aware of this program (training, newsletter, bulletin board, other)?

   The program is briefly described in Nuclear General Employee Training (NGET). It may also be mentioned in occasional safety meetings or departmental tailgates.

ADDITIONAL COMMENTS: (Including characteristics which make the program especially effective or ineffective.)

In viewing the number of official "Records of Concerns (ROC)," that are formally tracked, investigated, and resolved, the effectiveness of the program is questionable. No ROCs have been generated thus far for 1993. This may be partially related to the staff reduction and availability of personnel to conduct exit interviews. Due to the lack of resources, some concerns which would have been handled as official ROCs in previous years are now being handled more informally.

The person completing this form please provide the following information to the Regional Office Allegations Coordinator and fax it to Richard Rosano at 301-504-3431.

NAME: TITLE: PHONE #:

David E. Hills / Senior Resident Inspector / (815) 357-8611
DATE COMPLETED: 09-06-93