U. S. NUCLEAR REGULATORY COMMISSION

REGION III

REPORT NO. 50-254/96004(DRP); 50-265/96004(DRP)

FACILITY
Quad Cities Nuclear Power Station, Units 1 and 2

License Nos. DRP-29; DPR-30

LICENSEE
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 300
Downers Grove, IL 60515

DATES
March 5 through April 16, 1996

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6/5/96
Date

AREAS INSPECTED

The inspectors performed a routine, unannounced inspection of operations, engineering, maintenance, and plant support while routinely evaluating safety assessment and quality verification activities. Inspectors performed follow-up inspection for non-routine events and for certain previously identified items.

Executive Summary

Operations

Personnel errors in the out-of-service (OOS) program rendered the shared diesel generator inoperable, and resulted in an inadvertent engineered safety features actuation.

- A poor review of an out-of-service resulted in inadvertently rendering the shared diesel generator inoperable to Unit 2. The improper OOS review was an example of a violation of technical specifications. (Section 1.2.).
- An out-of-service error caused by human error and deficiencies in scheduling outage work resulted in an inadvertent primary containment isolation. This was an example of a violation of the technical specifications. (Section 1.3).
- An operator knowledge deficiency resulted in failure to perform a required Unit 1 reactor protection system surveillance test prior to repositioning the mode switch. This was identified as a non-cited violation (Section 1.5).

Maintenance

Maintenance activities during the period included a significant scope increase of Unit 1 refueling outage Q1R14. The inspectors found skill of the craft deficiencies and lack of questioning attitude which adversely affected repairs of important equipment.

- Lack of training for electricians installing scram solenoid pilot valves resulted in rework of pipe pressure fittings on hydraulic control units (Section 2.1.).
- A failure of the Unit 1 standby liquid control valve to fire after maintenance activities was due to a poor solder joint, and revealed maintenance training deficiencies (Section 2.2).
- A work package contained unclear criteria for proper rotation of a room cooler fan. A lack of questioning attitude by the workers allowed rewiring the fan to the as found deficient condition (Section 2.3).
- A breaker failed during testing on a safety-related electrical bus. The licensee did not have a reliable method of determining where similar breakers were used (Section 2.4.).
- Licensee control and support of contracted work for the outage was good (Section 2.5.).

Engineering and Technical Support

Some engineering activities associated with testing were not well coordinated with operations. Material condition problems affected several important safety systems. These included an atypical number of intergranular stress

corrosion cracking (IGSCC) indications in recirculation system piping. However, the licensee's inservice inspection program identified the deficient conditions and the flaws were adequately addressed.

- Engineering personnel did not document deficient test results on problem information forms. This resulted in operations failing to evaluate as-found flood barrier conditions for operability (Section 3.1.).
- The inspectors considered the number of recirculation piping indications identified by the licensee's inservice inspection program to be atypical (Section 3.2.).
- ComEd's decision to install core plate wedges, as a preemptory measure for potential core plate cracking, demonstrated good safety focus (Section 3.5.).
- Core spray (CS) header piping crack indications were detected and repaired. A report on revised estimates of peak cladding temperatures (PCT) under accident conditions was submitted to the NRC (Section 3.6).
- Inaccurate computer modeling of fuel burnup during the operating cycle resulted in divergence between expected and actual core parameters. (Section 3.7.).
- The inspectors identified a discrepancy between design drawings and system configuration (Section 3.8.).
- Two separate instances of missed Inservice Testing (IST) surveillances occurred due to problems recognizing and identifying the test was required. Two non-cited violations were identified (Section 3.10.).

Plant Support

- Outage ALARA planning and dose control were good. However, emergent work and higher than expected dose rates resulted in higher outage dose (Section 4.1.).
- The inspectors noted continuing licensee radiological performance problems (Section 4.1.2.).
- Oversight and implementation of chemistry program was good. However, there were maintenance problems with some sampling equipment (Section 4.2.).

Summary of Open Items

Violations: identified in Section 1.2 and 1.3

Unresolved Items: not identified in this report

Inspector Follow-up Items: identified in Section 2.4., 3.2., 3.6, 3.7, 3.8, 4.1.2. and 4.1.2.1.

Non-cited Violations: identified in Sections 1.5. and 3.10

INSPECTION DETAILS

1.0. OPERATIONS:

The inspectors used NRC Inspection Procedures 71707 and 93702, to evaluate routine plant operations. However, deficiencies in preparation and review of out-of-services (OOS) resulted in safety equipment inoperability. An OOS authorized by the outage schedule and an operator error resulted in an engineered safety feature actuation.

1.1. Follow-up of Events (93702)

Unit 1 remained in refuel outage Q1R14 during the inspection period. Outage activities completed during this inspection period included: replacement of reactor water cleanup piping; overhaul of control rod drive system; core shroud repair and inspection; recirculation pipe weld inspection; and high pressure turbine inspection.

Unit 2 started the period with the main turbine off line to replace a turbine control valve servomotor. For the remainder of the period, Unit 2 remained at or near full power.

The following is a timeline of events which occurred during this inspection period. Some events required prompt notification of the NRC. These events were reviewed for reporting timeliness and immediate licensee response.

March 4	Emergency Notification System (ENS) call. "B" Control Room ventilation was declared inoperable due to inlet and outlet dampers failing to close.
March 5	ENS call. Scott County sirens were inoperable due to offsite configuration control problem.
March 5	Unit 2 generator was synchronized to grid after replacing Number 2 turbine control valve servo motor.
March 7	ENS call. Licensee believed fuel movement was in progress with no operable standby diesel generator. ComEd later determined the ENS call was not required.
March 15	ENS call. An out of service tagout on primary containment isolation system relay resulted in reactor building ventilation stopping and standby gas treatment automatically starting.
March 19	ENS call. Unit 2 high pressure coolant injection was declared inoperable due to auxiliary oil pump problem. Troubleshooting revealed a failed annunciator circuit component.
April 16	ENS call. An unauthorized entry into the protected area. The individual was apprehended prior to leaving the entry building and escorted from the protected area. (Reviewed in report 254/265-96006.)

1.2. Shared Diesel Generator Inoperable for Unit 2 Due to Out-of-Service Error

Poor preparation and review of a change to an out-of-service rendered the shared standby diesel generator (SBDG) inoperable for Unit 2. The condition existed continuously for three days before being identified by Operations.

Unit 1 was shut down and Unit 2 was at full power on February 29 when operators hung the first of a series of four out-of-service (OOS) tags to remove fuses powering the shared SBDG auto start relay (ASR 1/2-1). The OOS stated the shared SBDG would still be operable to Unit 2. On March 4, operators identified that removing power to ASR 1/2-1 would prevent the shared SBDG from electrically loading to Unit 2. The licensee determined the shared SBDG was inoperable to Unit 2 from February 29 until operators reinstalled fuses to the ASR on March 4. This condition, though undesirable, met technical specification limiting condition for operation requirements.

ComEd corrective actions in addition to reinstalling ASR fuses included adding procedure changes and counseling the individuals involved in the event. ComEd temporarily required complex electrical OOSs be reviewed by a third qualified reviewer prior to issuance. Operations issued procedure changes to clarify SBDG operability status for all operating and testing procedures found to require ASR fuse removal.

ComEd procedure QCAP 230-4, "Equipment Out of Service," Rev. 14, steps D.1.f.1.(c) required OOS reviewers review OOS activities to ensure operational concerns associated with the activity are identified. This OOS problem was a **Violation (50-254/265-96004-01a)** of Technical Specification (TS) 6.2.A.1 as implemented by Regulatory Guide 1.33, Rev. 2, Appendix A, Paragraph 1.c. since neither the OOS preparer, the OOS reviewer or unit supervisor recognized performance of OOS numbers 19190, 19698, 18862 and 19187 rendered the shared SBDG inoperable to Unit 2.

1.3. Out-of-Service Error Produces Emergency Safeguards Feature (ESF) Actuation

On March 15 operators hanging OOS tags caused a trip of the primary containment isolation (PCI) system. This event revealed human performance and work scheduling deficiencies.

During refueling outage Q1R14, Unit 1 operators removed a "B" train PCI group II relay for an OOS. This produced an expected group II PCI trip and annunciator for channel "B." On March 15 operators deenergized channel "A" to PCI during an OOS. With both channels of PCI deenergized, a full PCI group II signal was inserted. All PCI group II equipment actuated properly.

Prior to deenergizing channel "A," the OOS required the unit supervisor (US) to check the PCI relays to ensure no "B" channel PCI trips were in.

The US observed the "B" channel PCI annunciator was not lit. However, the annunciator light was not lit due to workers previously disconnecting the channel "B" PCI annunciator causing the alarm to clear with channel "B" PCI trip still inserted. Additionally, the US checked relays to ensure PCI channel "B" was not in a tripped condition. However, the US checked the reactor protection system (RPS) relays instead of the PCI relays.

ComEd investigated this event using Problem Identification Form (PIF) 96-0943. The investigation identified several deficiencies and attributed inadequate self-checking as the root cause of the event. ComEd counseled the responsible individual and initiated a training request to include lessons learned for licensed operator requalification training.

The inspectors determined ComEd's investigation addressed all aspects of the event, but the inspectors questioned the determination of inadequate self check as the sole root cause. ComEd relied on operators to ensure plant status was appropriate for delayed outage work to commence. The inspectors noted problems in scheduling of outage work, since delays in work on "B" train safety equipment did not adequately preclude initiation of work on "A" train safety equipment. Had the schedule prevented working on both channels of PCI simultaneously, the operator would not have been challenged. As a result of this event, the inspectors noted ComEd changed the outage schedule format to more clearly indicate prerequisite work completion for outage tasks.

This OOS problem is a **Violation (254/265-96004-01b)** of TS 6.2.A.1 as implemented by Regulatory Guide 1.33, Rev. 2, Appendix A, Paragraph 1.c. Procedure QCAP 230-4, "Equipment Out of Service," Step D.1.g.2. required the US to review OOS activities to ensure plant conditions were correct to support the activity.

1.4. Operations Observations

The inspectors observed performance of operating crews both in the simulator and in the control room. The inspectors determined operator panel monitoring and communications were good. The return to service of the Unit 2 main generator after turbine control valve servomotor repair was conservative and in accordance with procedures. During performance of a test, the inspectors observed a good questioning attitude by a nuclear station operator who questioned the test engineer about an unanticipated light indication. Logic prints were checked to verify the indication was correct. However, in another instance, a miscommunication resulted in an operator isolating backup nitrogen to shared SBDG ventilation louvers in lieu of Unit 1 SBDG ventilation louvers. The condition was quickly identified and corrected.

1.5. Follow-up on Non-Routine Events and Previously Opened Items. The inspectors used NRC Inspection Procedures 92701 and 92702 to review previously identified items and to ensure that corrective actions were accomplished in accordance with the technical specifications. This

included reviewing the responses to notices of violation, inspection followup items (IFIs), and licensee event reports (LERs).

(Closed) LER 50-254/95-006: "Mode Switch Taken Out of Shutdown Prior to Completing TS Required Surveillance." With the Unit 1 reactor in cold shutdown in November 1995, operators repositioned the reactor mode switch from SHUTDOWN to REFUEL prior to performing the functional test of the reactor protection system electrical protection assemblies (RPS EPAs). Two days later, the operating crew recognized that the surveillance test had not been completed and returned the reactor mode switch to the SHUTDOWN position. The RPS EPAs were subsequently verified operable by performing the required functional test.

ComEd determined the root cause of the missed surveillance to be ineffective written communication. The procedure did not define RPS EPA operability as requiring the functional test. Corrective actions included a procedure change to clarify the operability requirements of the RPS EPAs. These requirements were reviewed during operator requalification training.

Failure to perform this surveillance prior to repositioning the mode switch was a violation of Technical Specification 3.9.F.1. This licensee-identified and corrected violation is being treated as a **Non-Cited Violation (254/265-96004-02)** consistent with Section VII.B.I of the NRC Enforcement Policy.

(Closed) Inspector Follow-up Item (50-254/265-94004-15): Operability Evaluations. The Diagnostic Evaluation Team (DET) inspection determined operations lacked a process for evaluating degraded equipment. ComEd initiated an integrated reporting program to document deficient conditions. The PIFs generated by the program were reviewed and evaluated by operations personnel for operability. The inspectors noted the programmatic change of philosophy and better accountability improved the operability determination process. This item is closed.

(Closed) LER 50-254/93017: Both Units' High Pressure Coolant Injection (HPCI) Pumps made Inoperable when Level Switches to Drain Pots Found Isolated. An equipment operator received verbal instructions from a system engineer to reposition valves on both units' HPCI drain pots. The improper valve positioning resulted in both HPCI units becoming inoperable. This event was the subject of a violation as documented in Inspection Report 50-254/265-93025 and previously closed. Engineering issued a memorandum to staff to require verbal instructions to operators be reviewed by the operations supervisor first. The inspectors have reviewed ComEd's corrective actions and consider the item closed.

(Closed) LER 50-254/93020: Loss of Shutdown Cooling Event. This item was considered a violation as documented in Inspection Report 50-265-93031 and previously closed. ComEd implemented corrective actions for this event. The inspectors reviewed ComEd's corrective actions and noted improved operator performance. This item is closed.

(Closed) LER 50-254/93021 and Rev. 1: Reactor Core Isolation Cooling (RCIC) Pump Declared Inoperable. ComEd replaced a defective pressure switch. Subsequent testing successfully proved RCIC operable. This item is closed.

2.0. MAINTENANCE:

The inspectors used NRC Inspection Procedures 62703 and 61726 to evaluate routine maintenance and testing activities. However, rework problems continued due to skill of the craft problems. Also, deficiencies in training and questioning attitude adversely affected maintenance of important equipment.

2.1. Improper Use of Pressure Fittings

Lack of training for electricians mechanically installing scram solenoid pilot valves resulted in rework to repair hydraulic control unit (HCU) air header fittings.

On Unit 1, contractors observed ComEd electricians improperly connecting scram solenoid pilot valve (SSPV) assemblies with new Swedgelok pressure fittings into existing Hoke pressure fittings. Industry standards, manufacturers instructions, and ComEd policy do not allow mixing different brands of pipe pressure fittings. ComEd electricians installed the fittings using "skill of the craft" practices and were not aware of the unacceptable practice of mixing pressure fittings.

Electricians previously replaced SSPVs on both units and mixed pressure fittings in November 1994 for 122 Unit 1 HCUs and in July 1995 for all Unit 2 HCUs. However, the condition was not identified until this outage. The pipe fittings had been subjected to about 100 pounds per square inch pressure and had been leak tested prior to returning the HCUs to service.

Technicians replaced all mismatched joints on Unit 1 HCUs with proper fittings during the outage. ComEd planned to replace all affected Unit 2 HCU joints during the next refueling outage. Engineering evaluated the condition as acceptable since the structural integrity of the joint was intact and a failed joint would not prevent a scram. Maintenance planned to train electricians on proper use of pressure fittings.

The inspectors reviewed ComEd's evaluation and determined the evaluation and corrective actions were appropriate.

2.2. Standby Liquid Control (SBLC) Deficiencies

An April 10 failure of the Unit 1 "A" SBLC squib valve to operate during surveillance testing was indicative of a degraded system condition and poor soldering techniques by maintenance personnel.

The squib valve is an explosive-operated valve in the discharge header of the SBLC system. Unit 1 outage testing and inspection found on two occasions that, although the valve showed proper continuity indications, the squib valve would not actuate.

Troubleshooting revealed a loose wire in a soldered connection to the squib firing circuit. Electricians soldered the loose wire, and the valve fired satisfactorily. Engineering inspections following the test revealed the same wire was again loose, indicative of a poor soldering technique. Electricians also felt that the difficult environment for soldering the connection contributed to the problem. The circuit board was then removed from the control room panels to the electrical shop to perform the rework. Further investigation by ComEd revealed that soldering techniques were not routinely taught to electricians, and were considered skill of the craft capability. This event, and an event where electricians mixed SSPV tubing connections (Section 2.1) were indicative of electrical maintenance department training deficiencies.

ComEd documented corrective actions for the problem in PIF 96-1367. Corrective actions included checking for proper solder joints on all firing circuit connections in both units; improving the layout of the wiring for ease of soldering, and issuing training requests for soldering classes for electricians. The inspectors concluded that the final corrective actions were appropriate, but that initial root cause and corrective actions did not identify problems with craft capability and work environment.

2.3. Room Cooler Fans Operating Backwards

A lack of questioning attitude by maintenance workers coupled with an unclear work package led to workers reassembling a standby diesel generator room cooler in a degraded condition.

ComEd identified the Unit 1 diesel generator cooling water pump (DGCWP) room cooler fan rotated in a manner to push air through the cooler and into the room. However, a vendor drawing specified that the fan draw air from the room through the cooler. Operations tested the Unit 2 and shared DGCWP room cooler fans and identified the shared DGCWP fan also pushed air through the cooler in the wrong direction. ComEd did not know the duration that both the Unit 1 and shared DGCWP room cooler fans had rotated in reverse. Electricians rewired the affected DGCWP room cooler fans to ensure air flow was in accordance with the vendor drawing.

Engineering evaluated the condition on problem information forms (PIF 96-1096 and 1097) and determined the room coolers could remove sufficient heat generated in the room with the fans rotating in reverse, although the cooling capacity of the coolers was degraded.

Maintenance had worked on the Unit 1 DGCWP room cooler fan three weeks earlier and had reconnected the leads to the as-found condition. The workers checked fan rotation as correct and annotated in the work

package that the fans were blowing air through the cooler. The inspectors noted the work package had not specified which direction air was to blow across the cooler coils, but only specified the fan be checked for correct rotation. A lack of questioning attitude kept maintenance workers from detecting the deficient condition. The licensee trained work analysts to ensure specific criteria for retests was included in future work packages.

ComEd fortuitously identified the deficient condition as a result of another retest. A good questioning attitude by engineering led to the identification and correction of the condition. There were no other periodic tests to verify air flow was proper. The inspectors reviewed the licensee's corrective actions and determined the corrective actions were appropriate.

2.4 Safety-Related Electrical Breaker Failure

During performance of QCTS 340-4, "MCC 18/19-5 Auto-Transfer Logic Operability Surveillance," the electrical breaker powering safety-related Unit 1 motor control center (MCC) 18/19-5 from bus 19 experienced a phase to ground short. The breaker was deenergized from the fault. This deenergized MCC 18/19-5. With Unit 1 shut down and defueled, no equipment energized by the bus was required to support plant conditions. ComEd later replaced and successfully tested a new breaker.

ComEd inspected and replaced the main contactor coil on the bus 18 supply to MCC 18/19-5. Engineering visually checked the Unit 2 MCC 28/29-5 feed breakers and did not identify any damaged coils.

The inspectors noted the licensee did not have a reliable method to locate installed contactors similar to the one that failed. Corrective actions, including those actions for similar breakers on Unit 2, have not been identified. The inspectors consider this an **Inspection Follow-up Item (50-254/265-96004-03)** pending review of the licensee's corrective actions.

2.5. Contractor Work Control

During the Unit 1 outage, the inspectors interviewed contract workers and reviewed contractor work packages to assess adherence to ComEd work procedures. The inspectors determined work performed by contractors was acceptable and ComEd support of contracted work efforts was good.

The inspectors interviewed some pipe fitters who felt time pressure from supervisors to start and complete jobs. The inspectors interviewed other pipe fitters and other craft personnel and determined this problem was not widespread. However, some pipe fitters commented that pre-job walkdowns could not be done fast enough, but time pressures were no different this outage than past outages. Some welders and pipe fitters expressed concern with not having enough workers to complete jobs in a

timely manner. The inspectors found no evidence of poor work practices as a result of time pressures or worker availability.

The inspectors reviewed work packages from different contract disciplines and determined all work package pre-job checklists were completed except for work done on valve 1-0220-65. Workers completed 17 of 18 steps in the pre-job checklist, but the job was started without completing the checklist. The inspectors noted the work was completed satisfactorily without completion of the pre-job checklist.

All work packages for plant work (as opposed to shop work) reviewed by the inspectors received shift authorization prior to the start of work. Most workers believed ComEd support of the work effort was good. However, there were some problems with parts availability prior to or after the start of work. Reactor water cleanup pipe replacement, recirculation piping overlay welding and residual heat removal corner room work were performed by experienced workers and job preparations and work execution appeared good. Workers overhauling hydraulic control units (HCUs) were well trained for the tasks. The inspectors noted the contract workers identified deficiencies created by ComEd electricians during the installation of scram solenoid pilot valves (See Section 2.1).

Overall, the inspectors determined contract outage activities were performed in an acceptable manner.

2.6. Follow-up on Non-routine Events and Previously Opened Items. The inspectors used NRC Inspection Procedures 92701 and 92702 to review previously identified items and to ensure that corrective actions were accomplished in accordance with the technical specifications. This included reviewing the responses to notices of violation, IFIs, and LERs.

(Closed) Unresolved Items (50-254/265-93025-04a, b, c, & d): Four examples of failure to follow procedures were identified during the Diagnostic Evaluation Team (DET) inspection. These items were documented as a Violation 50-254/265-94004-22b and were since closed. The inspectors noted improved maintenance performance since the DET and consider the above unresolved items closed.

(Closed) Inspector Follow-up Item (50-254/265-94004-09): Maintenance Backlog. ComEd increased resources and developed a "Fix-it-Now" team in an effort to reduce the maintenance backlog. ComEd changed the work control process and work scheduling since the DET. ComEd management included the maintenance process in the 1995 and 1996 Management Action Plans to ensure the process received management scrutiny. The inspectors noted declining trends in the maintenance backlog and consider this item closed.

(Closed) LER 50-265/94001: RCIC Declared Inoperable. ComEd disassembled and replaced the Unit 2 RCIC pump rotating element due to wear on the pump shaft, sleeve and bushing. ComEd changed the in-

service testing (IST) parameters for the new RCIC rotating element. ComEd tested the pump and declared the pump operable. The inspectors reviewed the test results and consider the item closed.

3.0. ENGINEERING AND TECHNICAL SUPPORT:

The inspectors used NRC Inspection Procedure 37551 to evaluate the engineering performance. The inspectors used NRC Inspection Procedures 37700 to evaluate the licensee's repairs of core shroud and core spray line and used NRC Inspection Procedures 73051, 73753 and 73755 to evaluate the licensee's Inservice Inspection program. The inspectors determined there were some problems in documenting deficient conditions on problem information forms. However, the inservice inspection program identified deficient conditions on recirculation system piping and core internals. The inspectors noted an apparent ineffectiveness of the induction heat stress improvement to prevent intergranular stress corrosion cracking (IGSCC) of recirculation system piping.

3.1. Untimely Operability Evaluation of Flood Barrier

Test procedure problems and test engineers caused delays in documenting deficient test results on problem information forms (PIFs). This prevented operations personnel from evaluating as-found flood barrier conditions for operability in a timely manner.

On February 24 engineering identified a leak at a penetration through the "D" residual heat removal service water (RHRSW) vault using a soap bubble solution. Engineering initiated repairs in accordance with QCTS 820-01, "Leak Test Condensate Pump Room Flood Protection Vault Penetrations." The deficient condition was not documented until March 6 (PIF 96-0810). Operations then declared the flood barrier inoperable since leakage exceeded the acceptance criteria specified in TS 4.5.H.1.a. The inoperable flood barrier required Unit 1 be shutdown per TS 3.5.H.3; however, Unit 1 was already shutdown. This resulted in operations declaring the Unit 1 SBDG cooling water pump (located in the "D" RHRSW vault) inoperable. Mechanics repaired and retested the seals satisfactorily. ComEd later determined the Unit 1 SBDG had been operable during the time the "D" RHRSW vault flood penetration was inoperable since any leak through the "D" RHRSW vault penetration would have been small and within the capacity of the RHRSW vault sump pump.

ComEd management suspended all engineering testing until management communicated to engineering its expectations for documenting identified problems on PIFs. The untimely documentation of the condition prevented operations from performing a timely evaluation of safety equipment operability. ComEd changed flood penetration testing procedures to ensure one RHRSW vault was verified as operable prior to testing other RHRSW vaults.

The inspectors found ComEd's evaluation and corrective actions appropriate, however, noted that it was a further example of insufficient communications between Engineering and Operations.

3.2. Inservice Inspection - Recirculation System Activities

During ultrasonic testing of recirculation system pipe welds, ComEd identified intergranular stress corrosion cracking (IGSCC) indications requiring repair. The number of IGSCC indications appeared abnormally high.

The indications exceeded allowable flaw sizes of IWB-3500 of Section XI of the ASME Code in eight recirculation welds. The indications were associated with welds designated as category "C" type welds in Generic Letter (GL) 88-01 "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping." In accordance with GL 88-01 requirements, ComEd expanded the inspection scope to include 100 percent of category "C" welds in the recirculation system piping. Due to the extent of indications identified, ComEd performed weld overlay repairs on five welds. ComEd evaluated the remaining indications as being acceptable for continued use for five years. None of the affected welds in the recirculation piping had previously been repaired with weld overlays, but all had an induction heat stress improvement process applied in 1984.

The inspectors considered the amount of IGSCC indications detected in recirculation piping to be atypical. The inspectors believed the amount of indications to be an apparent ineffectiveness of the induction heat stress improvement (IHSI) to control IGSCC in recirculation system piping. The inspectors requested the licensee submit an evaluation of IHSI performance and corrective actions planned to control IGSCC in the recirculation system to the NRC for evaluation. The inspectors consider this an **Inspector Follow-up Item (50-254/265-96004-04)** pending NRC review of the licensee's investigation.

3.3. Inservice Inspection (ISI) Program

ComEd and contractor ISI personnel effectively detected, sized and evaluated intergranular stress corrosion cracking (IGSCC) found during Unit 1 inspections and complied with applicable procedures and program requirements. However, the inspectors identified some deficiencies.

In relief request CR-04, ComEd committed to comparison of "select" calibration block ultrasound attenuation and velocity parameters within plant materials examined. The inspectors questioned the documentation of the calibration block material used to calibrate ultrasonic test (UT) instruments. This prompted ComEd to document the condition on PIF 96-0595. Corrective actions included issuance of Procedure SPI-010, Revision 0, "Ultrasonic Procedure for Attenuation and Velocity or Angle Measurement" to comply with relief request CR-04 commitments.

Less than 90 percent of each reactor vessel shell weld was inspected as required by 10 CFR 50.55a(g)(6)(ii)(A)(2). Inspectors identified that an alternative examination pursuant to 10 CFR 50.55a(g)(6)(ii)(A)(5) had been submitted to the NRC prior to performing the reactor vessel examination. ComEd personnel also committed to seek relief from

applicable ASME Section XI, 1989 Edition requirements for inside diameter reactor vessel weld UT examinations.

ComEd's commitments to Generic Letter (GL) 88-01 and Supplement 1, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping," included adding the following statement to Unit 1 technical specifications; "The Inservice Inspection Program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods, and personnel and sample expansion included in this generic letter." Inspectors reviewed Unit 1 technical specifications and determined this statement had not been added. ComEd personnel committed to add this statement in a future revision and upgrade to the Unit 1 technical specifications.

3.4. Inservice Inspection - Qualifications of Non-Destructive Examination (NDE) Personnel

Inspectors reviewed personnel qualifications and certifications for compliance with ASME Code, SN-TC-1A and applicable NRC requirements. The inspectors determined personnel certification records were properly documented and reviewed by ComEd personnel and the ANI inspector for ASME Section XI inspections. Although qualifications were satisfactory, some documentation of licensee changes to commitments were necessary.

A January 4, 1996, letter from Bob Rybak of Commonwealth Edison to US NRC "Augmented Examination of the Reactor Pressure Vessel (RPV) Shell Welds Pursuant to 10CFR50.55a(g)(6)(ii)(A)" committed ComEd to perform reactor vessel shell weld examinations from the inside diameter in accordance with the rules of Appendix VIII of ASME Section XI, 1992 Edition through 1993 Addenda. Section VIII-2200 of Article VIII-2000 of Appendix VIII of ASME Section XI, 1992 Edition through 1993 Addenda, required that personnel meet qualification requirements of Appendix VII and Article VIII-3000 of the same Code edition. NRC inspectors determined that personnel performing these inspections had been trained and certified to ASME Section XI, 1989 Edition requirements. Licensing department personnel committed to issue a letter, to the NRC, addressing this change in commitments.

3.5. Core Shroud Repair

ComEd modified the Unit 1 core shroud to repair cracked girth welds. The modification installed four tie rod assemblies, which structurally reinforced horizontal shroud welds.

ComEd demonstrated effective oversight of contractor activities. The decision to install core plate wedges, as a preemptory measure for potential core plate cracking, demonstrated good engineering safety focus.

3.6. Core Spray Pipe Inspection and T-Box Repair

ComEd's analysis and repair of core spray piping cracks were acceptable.

ComEd visually examined core spray (CS) header piping and detected indications on the "B" CS piping elbows. ComEd submitted a flaw evaluation to the NRC to demonstrate system integrity. The T-box repairs and associated flaw analysis performed on the "B" CS header bounded the additional indications identified on the "B" CS pipe elbows.

ComEd performed design loading calculations for the CS T-box clamp repair based upon a recirculation line break accident. As described in the Updated Final Safety Analysis Report (UFSAR), this accident was the bounding load condition for design of the T-box repair.

ComEd's 10 CFR 50.59 evaluation for the T-box repair considered the effects of CS pipe leakage with the T-box clamp in place. The evaluation determined that during postulated accidents, the peak cladding temperature (PCT) could increase to a value above that currently described in the UFSAR. The combined effect of postulated leakage from the internal CS piping cracks and core shroud cracks was calculated to raise the UFSAR PCT by more than 50°F. This issue was reviewed by NRC inspectors and it was determined that an unreviewed safety question did not exist. The calculated change in PCT was anticipated to remain well below the limit of 2200°F specified in 10 CFR 50.46. ComEd committed to change the UFSAR and had submitted a report to the NRC in accordance with 10 CFR 50.46(a)(3) requirements. The inspectors consider this an **Inspector Follow-up Item (254/265-96004-05)** pending review of the report.

3.7. Divergence Between Expected and Measured Core Parameters

The inspectors determined licensee trending and evaluation of core thermal parameters was good.

ComEd identified divergence between expected and actual values of MFLPD (maximum fraction of limiting power density) and MAPRAT (maximum average planar linear heat generation rate power ratio) on Unit 2. These parameters were generated by the core monitoring code and measured core thermal properties during power operations. During monthly reactivity anomaly surveillances, ComEd detected an unanticipated divergence of these two core parameters.

ComEd documented this condition on a Problem Information Form (PIF 96-0979) and continued to investigate how the divergence occurred. The Unit 2 MAPRAT and MFLPD values were below the operational limits. ComEd established constraints and limits for unit maneuverability intended to restrict values from reaching any operational limits. At the end of the period, ComEd had partially inserted some control rods to reduce the values of MAPRAT and MFLPD. The inspectors consider this an **Inspector Follow-up Item (254/265-96004-06)** pending completion of inspection activities.

3.8. Off Gas System Timer Running Indicator Not Identified on Design Drawings

The inspectors identified a discrepancy between design drawings and system configuration. The inspection uncovered a potential for other drawing discrepancies and the possibility of an unreviewed temporary modification.

The inspectors questioned operators regarding two light bulbs plugged into the offgas timer test jack located in the control room. The timer isolated the offgas system 15 minutes after receiving a main steam line high radiation signal. The inspectors were concerned that the lights were an unreviewed temporary alteration since the current system drawings did not include the test jack or the light indications.

ComEd engineering later determined that the test jack for the lights was part of the original design. ComEd had planned to alter the offgas isolation timer circuitry, but the modification was canceled. At the time the modification was planned, system drawings were changed to reflect the planned installation of the timer indication lights. Changes to the prints since that time removed all indications of the test jack and indicating lights.

ComEd was reviewing the potential for the lights to be an unreviewed temporary modification, and a potential generic design deficiency in that design drawings may have been implemented for other modifications that were never installed. The inspectors consider this item an **Inspector Follow-up Item (254/265-96004-07)**, pending review of investigation results by ComEd.

3.9. Material Condition

During the inspection period, equipment problems continued to affect facility operation, challenge operators and/or cause increased unavailability of safety-related equipment. The following are examples of equipment problems identified during the period:

- During an engineering surveillance test, ComEd identified the feed breaker from bus 19 to safety related bus 18/19-5 failed. ComEd replaced damaged components (See Section 2.4.).
- Electricians installing scram solenoid pilot valves mixed Hoke and Swedgelok pressure fittings. This condition affected all Unit 2 and 55 Unit 1 HCUs (See Section 2.1.).
- Both Unit 1 diesel generator (DG) and shared DG cooling water pump room cooler fans rotated backwards due to inadequate post maintenance retest (See Section 2.3.). This condition degraded room cooler capacity.
- A Unit 1 standby liquid control squib valve failed to actuate during testing.
- A turbine control valve servo motor failed, producing steam pressure oscillations. Operators removed Unit 2 main turbine from service to effect repairs.

- A Unit 2 generator synchronizing relay prevented closure of the generator output breaker several times before a successful closure was accomplished.
- Recirculation pump motor generator set 2B decreased speed without operator demand.
- Unit 2 HPCI motor overload annunciator indicated problem with auxiliary oil pump. Troubleshooting revealed a failed annunciator circuit component.

3.10. Follow-up on Non-routine Events and Previously Opened Items. The inspectors used NRC Inspection Procedures 92701 and 92702 to review previously identified items and to ensure that corrective actions were accomplished in accordance with the technical specifications. This included reviewing the responses to notices of violation, IFIs, and LERs.

(Closed) Inspector Follow-up Item (50-254/265-94004-02): Spurious Group 1 Primary Containment Isolation System (PCIS) Actuations. ComEd installed a modification on both units to prevent main steam pressure fluctuations from causing spurious PCIS actuations after automatic reactor shutdowns. The inspectors consider this item closed.

(Closed) Violation (50-254/265-94004-13): Unit 2 Standby Diesel Generator (SBDG) Electrical Cabinet Not Seismically Mounted. ComEd welded the electrical cabinet to the baseplate, and corrected other deficient conditions. The inspectors consider the item closed.

(Closed) Inspector Follow-up Item (50-254/265-94004-35): Engineering Support of Maintenance and Operations. The inspectors noted improved engineering support of maintenance and operations since the DET. System engineers have increasingly planned and assisted in maintenance activities. Design engineering has been increasingly responsive to maintenance needs. Operator work-around lists have adequately tracked and assigned responsibility to engineering. The inspectors noted decreased numbers of operator work-arounds and increased assistance from engineering in operability determinations. The inspectors consider this item closed.

(Closed) Unresolved Item (50-254/265-96002-07): IST Discrepancies. Two separate instances of missed In-Service Test (IST) program surveillances occurred due to personnel failing to identify testing was required. A work package failed to indicate a post maintenance test was required and resulted in the Unit 1 2301-28 valve not being tested. The second event involved the failure to properly reschedule a SBDG check valve disassembly surveillance.

ASME Code requirements and licensee IST program procedures required valve testing after maintenance. ComEd did not route a Unit 1 work package for Valve 2301-28 through the IST group for assignment of post maintenance testing (PMT). Additionally, the electronic work control system (EWCS) did not contain information associated with this component

to trigger the review of the work request for IST requirements. ComEd generated PIF 95-2851 to investigate this event.

In November 1995, IST personnel identified that post maintenance testing was not performed on the Unit 1 HPCI 28 valve. ComEd later satisfactorily stroked the valve to verify operability and gather baseline timing data.

ComEd's corrective actions included meetings with work analysts and IST group personnel to ensure work package preparation included PMT requirements. Administrative procedures for the work control process were revised to clarify work package routing and IST PMT requirements. The IST group verified EWCS information with the master equipment list and the IST program boundary.

Post maintenance testing of the Unit 1 HPCI 28 valve was required by the ASME code in accordance with OM-10, Section 3.4, "Effect of Valve or Actuator Replacement, Repair and Maintenance on Reference Values." Failure to perform this test was a violation of 10CFR50, 50.55a, "Codes and Standards." This licensee-identified and corrected violation is being treated as a **Non-Cited Violation (50-254/265-96004-08)** consistent with Section VII.B.I of the NRC Enforcement Policy.

ComEd identified a second IST program-related missed test resulting in operations declaring the Unit 2 SBDG inoperable. Disassembly of the Unit 2 DG fuel oil transfer pump discharge relief inlet check valve was not performed in accordance with the revised IST schedule due to confusion over surveillance test rescheduling after sample group rearrangement.

The check valve was last disassembled on April 9, 1993. Both this check valve and the counterpart valve for the shared SBDG were originally together in a valve disassembly sample group. Each valve had a required inspection frequency of once every 48 months. In an effort to move work out of the refueling outages and into system windows, ComEd split the group. Each valve was defined as a group, reducing the inspection frequency to once every 24 months. Once the groups were redefined, the Unit 2 valve was already overdue for disassembly. Engineering did not identify the need for testing when the original regrouping was performed.

Upon discovery, ComEd disassembled and inspected the valve satisfactorily. ComEd documented this event on PIF 96-0221. For corrective actions, ComEd developed a technical position to reschedule surveillance tests when sample groups and frequencies were altered.

Failure to perform the surveillance in accordance with the revised schedule due to the regrouping was a violation of 10CFR50, 50.55a, "Codes and Standards." This licensee identified and corrected violation is being treated as a **Non-Cited Violation (50-254/265-96004-09)** consistent with Section VII.B.I of the NRC Enforcement Policy.

(Closed) LER 50-265/93021: Safety-related Cabinets Not Seismically Mounted. This item is similar to Violation 50-254/265-94004-13 above. ComEd performed inspections of other electrical cabinets and repaired cabinets required to be seismically mounted. ComEd planned to evaluate seismic adequacy of electrical panels and cabinets via a seismic qualifications utilities group (SQUG) program. The inspectors consider the item closed.

(Closed) LER 50-254/94004, Revision 1: Feedwater Flow Testing Found Flow Indication in Non-Conservative Direction. ComEd submitted Revision 1 to the LER to inform the NRC of the licensees actions to address GE Safety Information Letter, SIL 452, "Feedwater Flow Element Calibration." The inspectors reviewed the submittal and consider the LER closed.

(Closed) LER 50-265/95006, Revision 1: Motor Control Center 29-2 Main Feed Breaker Tripped Due to Inadequate Trip Setting. ComEd submitted revision 1 to the LER to document the root cause evaluation of the event. This item was subject to NRC enforcement actions as documented in Inspection Report 50-254/265-95007. The inspectors reviewed the submittal and consider the LER closed.

(Closed) LER 50-254/96002: "B" Control Room Ventilation System Inoperable due to Design Oversight of the Toxic Gas Analyzer. The inspectors previously reviewed and documented ComEd corrective actions in Inspection Report 50-254/265-96002. This LER is closed.

4.0 PLANT SUPPORT:

The inspectors used NRC Inspection Procedures 83750 and 84750 to evaluate plant support activities. Outage ALARA planning and dose control were good, but significant emergent work and higher than expected dose rates from hydrogen water chemistry (HWC) control and early removal from service of the reactor water cleanup (RWCU) system resulted in several jobs exceeding their respective dose goals. ComEd continued to experience radworker performance problems. Oversight and implementation of the chemistry program was good, but maintenance of some sampling equipment continued to be a problem.

4.1. Radiation Protection

4.1.1. Review of Unit 1 Outage Implementation

Outage ALARA planning efforts were good, but emergent work added to the station dose. The most dose significant work addition was the installation of structural steel supports to the residual heat removal (RHR) system. This work was necessary to correct an engineering deficiency. The estimated dose was about 63 rem for each of two RHR rooms. Lessons learned from the Unit 1 work will be used to plan similar work on Unit 2. At the end of the period, dose was about 21 rem for the "A" RHR room (45 percent complete) and 8 rem for "B" RHR room (20 percent complete).

The remainder of the emergent work and associated dose at the end of the inspection period included:

- An increase in inservice inspection (ISI) scope to 192 components (from 71) was due to identification of IGSCC of recirculation piping. About 63 rem was expended with about 85 percent of the work completed.

- Addition of weld overlays, on recirculation system piping (see Section 3.2.) accounted for an estimated 30 rem with about 65 percent of work completed.

- Significant work (valve cutout, replacement, etc.) was identified for several valves during local leak rate testing. This increased the projected valve work dose from 20 to 130 rem. Accrued dose was 105 rem with about 85 percent of the valve work completed.

ComEd planned to revise the outage and annual dose goals (480 and 700 rem, respectively) to account for the emergent work. ComEd indicated that there were adequate resources (manpower, etc.) and support to effectively handle the expanded scope.

Early removal from service of the RWCU system during shutdown resulted in crud intrusion into the reactor cavity and significantly increased refuel area dose rates (see Inspection Report 50-254/265-96002). This increased the dose for the Unit 1 reactor disassembly to 6 rem (twice the goal).

Higher than expected dose rates (Section 4.2.2.) impacted the turbine overhaul and several outage support activities. Contact dose rates on turbine components (100-1000 mrem/hr), were about 10 times higher than those observed during the last overhaul in 1990. This increased the general area dose rates on the Unit 1 turbine deck from 1-2 to 10-20 mrem/hr. Similar effects were also seen during erection of scaffolding for ISI. When 23 percent of the scaffolding was built, over 43 percent of the budgeted dose had already been received. ComEd revised the goal for erection of scaffolding and was considering increasing the use of ladders (where appropriate) and using permanent scaffolding in future outages. The inspector verified that the affected areas of the turbine deck were appropriately controlled.

General area drywell dose rates (100-200 mrem/hr) remained unchanged since the last Unit 1 outage, due to past source term reduction efforts. However, dose rates on steam piping increased, potentially due to HWC. Source term reduction efforts included chemical decontaminations of the RWCU and reactor recirculation (RR) systems. Other source term reduction efforts included removal and rerouting of the control rod drive (CRD) repair room sink drain line (see Inspection Report 50-254/265-95010), increased use of lead shielding and hydrolazing of high source term piping. Altogether, ComEd estimated that these efforts saved about 683 rem. Outage dose at the end of the inspection period

was about 583 rem with about 85 percent of the original outage scope completed.

Overall, outage ALARA planning efforts were good, but significant emergent work, early removal from service of the RWCU system, and higher than expected dose rates from HWC have resulted in several jobs exceeding expected dose goals. The inspectors noted that ComEd had effectively implemented contingency plans and was using good ALARA controls (cameras, shielding, etc.) to reduce exposure. The inspectors also noted good overall coverage by RP staff, with some radworker performance problems (Section 4.1.2).

4.1.2. Radiological Performance Issues

The inspectors reviewed the findings of an ongoing ComEd task force concerning radworker performance and the results of a previous task force addressing high radiation area (HRA) and locked high radiation area (LHRA) control events from 1994 to date. Both task forces concluded that the majority of the events resulted from poor radworker skills and a complicated work process.

ComEd continued to experience problems with radworker practices and was also identifying performance problems with contract RP technicians. During tours, the inspectors noted several examples of poor contaminated area control and work practices. These included:

- Establishing a contaminated work area on grating, above a clean area.

- Packing leakage from recirculation loop "A" discharge isolation valve (1-202-5A), flowing over recirculation pipe welds to be inspected.

- Elevated contamination levels in the lower portions of the dry well required additional anti-contamination clothing be worn by ISI personnel performing inspections. The additional clothing reportedly caused heat related fatigue and shorter work intervals.

Other examples primarily consisted of material crossing contaminated area boundaries, workers improperly wearing protective clothing and/or loitering in radiation areas. Additionally, ComEd identified several examples of poor radiation work permit (RWP) clarity. One event demonstrated a poor questioning attitude by a contract RP technician while covering turbine work. This resulted in an additional exposure (about 90 mrem) to a worker. ComEd attributed these problems to the large influx of contractors and their inexperience with the licensee's facility. ComEd increased worker counseling and training.

Poor root cause identification caused about 30 percent of the previous corrective actions to be ineffective in preventing recurrence. These findings were similar to previous NRC observations. ComEd was developing long term corrective actions to address the identified

deficiencies. Several of these actions consisted of revised management policies issued via memorandums to the workers that were not included in procedures. Similar memorandums were issued to correct past problems, but both the ComEd and NRC later determined the memoranda to be ineffective in preventing recurrence. ComEd intended to include policy revisions in plant procedures. The effectiveness of both task forces will be tracked as an **Inspector Follow-up Item (IFI 50-254/265-96004-10)**.

4.1.2.1. Contract Employee Exhibits Unacceptable Radworker Practices

A contract employee exhibited unacceptable radworker practices by engaging in improper conduct and by improperly using radiologically protected area (RPA) exit radiation monitors. A radiation protection technician (RPT) identified the events and generated PIF 96-1634.

One contractor working in the contaminated control rod drive (CRD) room, sprayed clean demineralized water at another worker who was located about 16 feet away.

Upon exit from the RPA, the same contractor alarmed the personnel contamination monitor due to a foot contamination. The worker attempted to remove the contamination by wiping his shoe. The worker proceeded back to the monitor, but did not properly place the potentially contaminated foot on the monitor. The same RPT who had monitored the job in the CRD room told the worker his actions were unacceptable.

The licensee took disciplinary action against the individual. Further actions planned included a discussion of this event with all contractor personnel. The inspectors consider this an **Inspector Followup Item (50-254/265-96004-10)** and will be reviewed with effectiveness of radiological task forces (See Section 4.1.2).

4.1.3. Internal Exposure

The inspectors reviewed four events concerning intakes of radioactive material. The intakes ranged from 80-200 nCi (^{60}Co) and, in each case, rapidly cleared the body with no internal exposure assigned. The intakes were attributed to weaknesses in job planning and poor radworker practice (touching face while inside a contaminated area or failing to notify RP of changing job conditions). Based on air sampling results and past history, neither TEDE-ALARA reviews nor respiratory protection were required. The inspectors reviewed ComEd's investigation, evaluation of the intakes and corrective actions. No problems were identified.

4.1.4. Licensee Tours of Infrequently Entered Areas

The inspectors reviewed a videotape produced by ComEd, documenting the material condition of the radwaste tank rooms and some other infrequently entered locked high radiation areas. Most of these areas were either highly contaminated or controlled as LHRAs. No leakage or

corrosion concerns were identified, but several areas did contain small amounts of resin on the floor. ComEd cleaned the affected areas and reviewed operational history to determine the cause. About 300 mrem was accrued from the tours and associated cleanup activities. Based on these results, ComEd planned to develop a periodic inspection plan for these areas. The inspectors considered the overall condition of the infrequently entered locked high radiation areas as acceptable.

4.2. Chemistry

4.2.1. Radiological and Non-Radiological Chemistry Program Review

The inspectors reviewed instrument quality assurance (QA) and control (QC) checks, analytical capability and chemistry technician (CT) performance.

Activities observed in the area of laboratory analytical activities were performed well. Chemistry instrument calibrations and QC performance checks were correctly performed and documented. A review of control charts indicated that instruments remained within statistical control. The licensee was participating in inter-laboratory comparisons for non-radiological and radiological chemistry, with good results. Additionally, CTs performed well in a licensee implemented intra-laboratory comparison program. During plant and laboratory tours, the inspectors noted that CTs used good sampling techniques and RP practices. No expired chemicals or reagents were noted in laboratory storage areas. The inspectors also reviewed CTs using the high radiation sample system. No problems were identified.

4.2.2. Water Quality and Hydrogen Injection

The trending and analysis of plant water chemistry parameters appeared to be well managed with few anomalies noted. No fuel integrity problems were noted, but the level of dissolved oxygen in the Unit 2 feedwater cycled between 20 - 35 ppb due to insufficient de-aeration at the seal troughs in the condenser. No corrosion problems were seen, but the chemistry staff was working with the system engineer and a contractor to resolve this issue.

Plant water quality improved, as evidenced by increased service life of ion exchange resin. This trend was due to several ComEd actions;

- plugging existing condenser tube leaks and increasing testing to prevent future leaks,
- improving makeup water quality by strictly controlling input to floor drains, and
- discharging floor drain water to the river (vs. recycling the water).

Frequent past cycling of HWC (see Inspection Report 50-254/265-94029) may have adversely affected radiological source term and increased dose rates in the turbine (Section 4.1.1) and condensate systems. Of special

note, was the ComEd hydrogen injection rate (50 standard cubic feet per minute (scfm)), which was significantly higher than the industry average (15-25 scfm). This injection rate was plant specific and was based on analyzed corrosion rates for the vessel internals. A recent ComEd analysis concluded the injection rate may need to be increased to 70 scfm to prevent further corrosion. ComEd was analyzing HWC effects on the source term and the expected increase in injection rate.

Hydrogen availability in the past was about 30-50 percent, but had improved to about 90 percent to date.

4.2.3. Maintenance of Chemistry Sampling Equipment

The calibration and maintenance program for the in-line instruments was good and modifications of the reactor water sampling panels were successfully completed. However, maintenance of other chemistry sampling equipment continued to be a problem. The chemistry staff identified and documented many of these problems in corrective action requests, yet progress in resolving issues remained slow. In particular, the overall operability of the high radiation sample system (HRSS) was sufficient for sample collection, but CTs had difficulty opening the door to the HRSS. The repair of the vacuum pumps used to obtain gas samples at the steam jet air ejector (see Inspection Report 50-254/265-93027) was not yet completed. ComEd acknowledged these findings and was developing corrective actions.

4.3. Previously Reviewed Items

The inspectors reviewed the status of inspector followup items (IFIs), licensee event reports (LERs), unresolved items (URIs) and violations identified in previous inspections.

(Closed) IFI 50-254/265-95004-07: Calibration of the Small Article Monitors (SAMs). ComEd had inadvertently inverted the calibration source while calibrating a SAM, resulting in a non-conservative counting efficiency. ComEd determined that the incorrect source placement did not significantly affect the SAM alarm limit. Corrective actions included: 1) an upgrade of the SAMs; 2) improved labelling of the source jig; 3) a procedural revision requiring verification of correct source placement; and 4) RP trending of SAM efficiencies. The inspectors verified that these actions were taken and that the problem had not recurred. This item is closed.

(Closed) LER 94006-01: Uncontrolled Exposure from ^{90}Sr Source. This event and the associated corrective actions were addressed in Inspection Reports 50-254/265-94021 and 94023. This item is closed.

(Closed) URI 50-254/265-94026-06: Control of Contaminated Material. Based on past events and an apparent ongoing trend of poor contaminated material control (see Inspection Report 50-254/265-95002), ComEd aggressively searched areas inside and outside the radiological protected area (RPA). A total of 84 slightly contaminated items were

identified (via SAM and direct frisk); 51 of which had no identifiable contamination via direct frisk. No items were found outside the licensee's protected area. These items appeared to be from past events and did not indicate an ongoing trend. ComEd planned similar selective inspections quarterly with the goal of searching all areas annually. Radworker training was also revised to stress the importance of contaminated material control. The inspector verified that no contaminated material events had occurred since these actions were completed. Based on the aggressive actions taken and performance to date, this item is closed.

(Closed) Violation 50-254/265-94013-05: Failure to Properly Label a Container of Radioactive Material. ComEd discussed the event with all personnel involved, verified that existing items tied off in the spent fuel pool were identified and labeled and revised applicable procedures. The inspectors verified that these actions were taken and that items tied off in the fuel pool were labeled. This item is closed.

(Closed) URI 50-254/265-95010-03: Failure To Contact The RP Department. This event was included in the ComEd assessment of radworker practices and the overall effectiveness of that review will be tracked via Inspector Follow-up Item (IFI 50-254/265-96004-09) opened in Section 4.1.2. of this report. This item is closed.

5.0. SAFETY ASSESSMENT/QUALITY VERIFICATION:

The inspectors used NRC Inspection Procedure 40500 to evaluate the safety assessment/quality verification programs. The inspectors found no major inconsistencies with UFSAR commitments.

5.1. Review of UFSAR Commitments

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR descriptions. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The following inconsistency was noted between the wording of the UFSAR and the plant practices, procedures and/or parameters observed by the inspectors.

In Section 3.4.of this report, the inspectors identified an increase in peak cladding temperature (PCT) could occur during postulated accidents from the core spray T-box clamp repair. The inspectors consider the issue minor since the increase in PCT was small and well below the 2200 degree F limit specified in 10 CFR 50.46(a)(3). ComEd committed to change the UFSAR.

6.0. EXIT INTERVIEW:

The inspectors met with ComEd representatives denoted below during the inspection period and at the conclusion of the inspection on April 16, 1996. The inspectors summarized the scope and results of the inspection. ComEd acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary.

The following management representatives attended the exit meeting conducted on April 16, 1996, along with others.

ComEd

Ed Kraft, Site Vice President
Chuck Peterson, Executive Assistant to Site VP
Bob Svaleson, Shift Operations Supervisor
Mike Wayland, Maintenance Superintendent
Mike Hayse, Site Quality Verification
Alan Blamey, Station Support Engineering Supervisor
Dave Craddick, System Engineering Supervisor
Dave Tubbs, Mid American Energy