

DCD/DCB
(RIDS)

January 9, 1992

Docket Nos. 50-237 and 50-249
License Nos. DPR-19 and DPR-25
EAs 91-164 and 91-165

Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Senior Vice President
Opus West III
1400 Opus Place
Downers Grove, Illinois 60515

Dear Mr. Reed:

SUBJECT: DRESDEN NUCLEAR POWER STATION UNITS 2 AND 3
NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL
PENALTIES - \$187,500
(NRC INSPECTION REPORT NOS. 50-237/91032(DRS);
50-249/91035(DRS); 50-237/91027(DRP); 50-249/91028(DRP);
50-249/91032(DRS); AND 50-237/91035(DRP);
50-249/91038(DRP))

This refers to four special safety inspections conducted during the period of August 29 through November 12, 1991, at the Dresden Nuclear Power Station Units 2 and 3 to review the circumstances surrounding six events. These events included (1) the failure of a local leak rate test (LLRT) associated with the Unit 3 containment drywell vent valve 3-1601-24 (LER 249/91-009), (2) exceeding the Unit 2 torus water high temperature Technical Specification limit on September 1, 1991 (LER 237/91028), (3) a 2800 gallon contaminated water spill from the Unit 3 control rod drive system via hydraulic control unit drain lines on September 23, 1991, (4) the scrambling of a Unit 2 control rod out of sequence during routine surveillance testing on October 6, 1991, (5) damaging the Unit 3 refueling mast and damaging the bails of two spent fuel bundles in the Unit 3 spent fuel pool on October 18, 1991, and (6) the loss of Unit 2 secondary containment integrity on June 24, 1991 (LER 237/91-013). The reports documenting these inspections were sent to you by letters dated November 15, 22, 27, and 29, 1991. Violations of NRC requirements were identified during the inspections, and on December 10, 1991, two enforcement conferences were held to discuss the violations, their causes, and your corrective actions. The reports summarizing the conferences were sent to you by letters dated December 13 and 17, 1991. All of the events were either reported to the NRC via the Emergency Notification System, or to the resident inspection staff, if not reportable.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

9201140023 920109
PDR ADOCK 05000237
Q PDR

IE14

The violation described in Section I of the enclosed Notice of Violation and Proposed Imposition of Civil Penalties (Notice) involves the local leak rate test (LLRT) of Unit 3 penetration X-125 failing on September 9, 1991 because the penetration could not be pressurized. The investigation of the failed test disclosed that the leakage was through outboard isolation valve 3-1601-24, and was caused by the installation of a new piston rod during the previous refueling outage. Maintenance, consisting of replacing the valve operator piston rod, had been performed on February 3, 1990. A post-maintenance LLRT was neither specified nor performed on valve 3-1601-24. The new piston rod increased the stroke of the valve actuator by approximately one-eighth of an inch, resulting in the valve disk rotating past the fully closed position to a position where the valve was partially reopened. This condition was not detected in the control room because the valve position lights indicated the valve was closed. Dresden Unit 3 was returned to power on February 11, 1990, with containment isolation valve 3-1601-24 partially open.

This violation is a significant regulatory concern because the failure to perform a proper post-maintenance test on the containment isolation valve represents a significant lack of attention towards licensed responsibilities. The potential safety consequence of the inoperable primary containment isolation valve is significant for an event requiring the use of inboard valves to prevent the loss of containment (e.g., Emergency Operating Procedures). Should one of the inboard valves fail, an uncontrolled discharge from the containment atmosphere directly to the environment would occur. Therefore, in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy) 10 CFR Part 2, Appendix C (1991), Violation I has been categorized at Severity Level III.

The root causes of Violation I and your subsequent corrective action were discussed during the enforcement conference. The major factors contributing to the violation appear to be an inadequate procedure to control and review work packages, which did not specify post-maintenance testing requirements, and informal communications between maintenance workers and work analysts. The work analysts did not view an LLRT as necessary following maintenance activities if work was not performed on the seating surface of the valve. In this instance, your technical staff believed the maintenance work was limited to the valve operator and not the seating surface. Further, the maintenance staff never informed the technical staff that the piston rod for the valve operator was replaced. The NRC recognizes that corrective actions have been initiated and appear acceptable. Immediate corrective actions included: performing an audit of Unit 2 valves to ensure that post-maintenance LLRTs were performed; requiring work analysts to specify a matrix of post-maintenance test requirements; expanding the distribution of color coded drawings specifying LLRT and ILRT requirements; and having the in-service inspection and in-service testing group review all work requests for containment isolation valves. Long term corrective actions included: performing an audit of Unit 3 valves requiring LLRT prior to restarting Unit 3; proceduralizing a post-maintenance testing requirements matrix; developing a maintenance memorandum for post-maintenance testing

requirements of primary containment valves; improving initial and requalification training of staff and operators concerning LLRT requirements; formalizing post-maintenance test requirements in a procedure; and evaluating the approaches of the other nuclear stations operated by Commonwealth Edison to ensure that appropriate post-maintenance testing requirements are included in work packages.

Section II of the enclosed Notice concerns four operational events. The first event, involving torus high water temperature, resulted from the untimely resolution of a stuck limit switch on a high pressure injection drain pot valve by operations personnel which eventually placed operators in a Technical Specification requiring immediate shutdown. However, the need for the shutdown went unrecognized by operations on-shift management for a significant time period. Specifically, on the midnight shift of September 1, 1991, with a reactor startup in progress, a licensed operator placed the high pressure coolant injection drain pot subsystem into an abnormal lineup in response to a high level annunciator. This abnormal lineup provided a direct heat input into the torus starting a slow increase in torus water temperature. The water temperature within the torus increased from 82 to 95 degrees F (the Technical Specification limit) over 15 hours without initiation of torus cooling. Once the need for torus cooling was recognized, another 11 hours passed before torus cooling was placed into service and the temperature reduced below the Technical Specification limit of 95 degrees F.

The event was characterized by the failure of three operating shifts to maintain cognizance of plant conditions, the failure of operations on-shift management to either provide timely resolution or take timely compensatory measures in response to an equipment problem, the failure of licensed personnel to follow established administrative controls, and the failure of senior licensed operators to be knowledgeable of the torus temperature Technical Specification requirements. Operations on-shift management placed a low priority on resolving the drain pot deficiency allowing the heat input to the torus to exist for 17 hours indicative of operations working around problems. The failure to follow established administrative controls resulted in omissions in the unit log by numerous licensed operators, inadequate verbal communications within shift crews, and inadequate verbal communication between shift crews. Minor contributors to the event were a weak alarm response procedure and inadequate management direction regarding turnovers for short term relief.

The second event occurred on September 23, 1991. With the reactor shutdown for a refueling outage and all the fuel in the spent fuel pool the licensed shift supervisor briefed a non-licensed equipment operator on the actions necessary to depressurize hydraulic control units (HCUs) to support placing the mode switch in shutdown. Without using the procedure, the equipment operator proceeded to depressurize all of the west bank HCUs. Consequently, he failed to close any HCU drain valves upon completion of the depressurizations as required by the procedure. Another equipment operator was dispatched by the shift supervisor to depressurize the east bank HCUs. This equipment operator, after

receiving instructions from the first equipment operator, depressurized the east bank HCU's also without using the procedure and also left the drain valves open. On September 25, 1991, the control air supply to the scram pilot solenoid valves was isolated, opening the scram valves, in accordance with out-of-service instructions to facilitate the rebuilding of the scram pilot valves. The combination of the scram and HCU drain valves being open established a drain path from the control rod drives to the reactor building floor. Approximately 2800 gallons of contaminated water spilled over the course of a few minutes until operators, responding to notification of the spill, could close the drain valves. This event was characterized by inadequate communications within the shift crew, a failure of non-licensed operators to use procedures in the performance of work activities, a lack of direction in the out of service instructions as to the scope of equipment boundary valves to be placed in a controlled status, and a lack of operations on-shift management enforcement of the implementation of established administrative controls.

The third event occurred on October 6, 1991. With the reactor at 35% power, operators commenced routine half-core scram testing after conducting heightened level awareness briefing for the testing. After scrambling the fourth control rod in the testing sequence, considerable difficulty was experienced by the licensed operator in returning the control rod to its original position. Before returning the control rod to its original position, the licensed operator directed the non-licensed equipment operator to isolate charging water to the next rod to be scrammed, which was inconsistent with the testing procedure. Upon isolating the charging water the equipment operator informed the licensed control room operator of completion of the task via the intercom and the licensed operator acknowledged. The inexperienced licensed individual who was assigned the task of scrambling control rods overheard the conversation about the isolation of charging water to the next control rod and assumed the control rod was to be scrammed. He proceeded to scram that rod. Upon scrambling the control rod, the control room operator recognized the error and testing activities were terminated. Throughout the testing the shift control room engineer was present in the control room but took a limited role in supervising the activity. The event was characterized by licensed operators failing to follow established procedures, operators working around equipment deficiencies, inadequate communications between shift crew members, in that a licensed individual failed to repeat back a supposed reactivity change command, and distraction of operations on-shift supervision from their primary responsibility of supervising individuals under their direction.

On October 18, 1991, with the reactor defueled, the fourth event occurred when a two-man fuel handling crew was reorganizing spent fuel bundles in the spent fuel pool to support the reloading of the reactor core. When one of the fuel bundles was placed in a new position and unlatched from the grapple, the crew failed to raise the grapple mast sufficiently and verify that the fuel bundle

bail handle had disengaged from the grapple. Upon lateral movement of the refueling bridge, the mast impacted two bail handles bending them. The crew immediately informed the fuel handling supervisor, who was not on the refuel floor at the time, of the damaged bail handles. However, the supervisor did not stop fuel handling activities. Subsequently, the crew moved three more fuel bundles to different positions. Activities only ceased after the crew heard abnormal noises while operating the grapple mast. Upon the fuel handling supervisor's arrival on the bridge, a diagnostic examination of the mast was initiated. During the diagnostic, the telescoping sections separated and collapsed rendering the mast incapable of moving fuel. Operations on-shift management (beyond the fuel handling supervisor) was not informed of the event until approximately eight hours later and the radiation protection organization was not informed until approximately twelve hours later. The event was characterized by inattention to detail by the fuel handling crew causing damage to the fuel bundle bail handles and the mast, inappropriate judgement by the fuel handling crew to continue activities after the damage, lack of appropriate supervisory direction to the fuel handling crew after the damage, and a lack of proper perspective as to the need to communicate problems to operations on-shift management. Contributory to the communication deficiencies were inadequate procedures for responding to abnormal situations and inadequate training on reporting requirements.

The NRC recognizes the actual safety consequences of these four operational events were not significant. Increasing the torus temperature to 97 degrees F caused no structural damage or loss of net positive suction head for the emergency core cooling pumps. Additionally, the temperature was well below the 120 degrees F limit required to maintain acceptable temperatures in the event of a loss of coolant accident. The contaminated water spill caused no challenge to the reactor core since the vessel had been defueled and only minor contamination of one individual occurred during the spill cleanup activities. Scramming the control rod out-of-sequence did not invalidate the shutdown margin or cause any reactivity management problems. Damage to the fuel bundle bails caused minimal changes in the core reload analysis. However, from a fuel bundle drop accident perspective, damage to the mast had significant potential safety consequences when the three additional fuel bundles were moved after damaging the mast. Fortunately, the damage incurred did not affect the load bearing capability of the grapple assembly.

Nevertheless, these events are of significant regulatory concern in that they are indicative of management's inability, despite similar previous events, to effectively deal with personnel performance problems. If not corrected, more significant events may occur. Over the past two years, numerous operational events and NRC violations resulted from operations personnel not adhering to established procedures, instances of inattention to detail and inadequate communications. Your own audit of operations in April 1991 also identified failures of personnel to adhere to established procedures. Corrective actions for these situations did not preclude repetition. Most recently, in response to the torus heatup and HCU drain-down events, the licensee stated that procedures would be followed at all times and commands would be repeated back when communicating. The out-of-sequence control rod scram event reflected a failure of the operating crew to meet these expectations.

January 9, 1992

In reviewing the four events discussed above, the NRC identified ten procedural adherence violations and one lack of adequate procedures violation. The violations in Section II of the enclosed Notice taken collectively, represent a breakdown in the control of licensed activities involving a number of related and recurring violations that collectively represented a significant lack of attention or carelessness toward licensed responsibilities in the control room and related station activities. Therefore, in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy) 10 CFR Part 2, Appendix C (1991), the violations are classified in aggregate as a Severity Level III problem.

We acknowledge your short term actions and long term approach which you presented at the enforcement conference regarding the four operational events. However, many of the actions were only developed after we expressed our concern that your corrective actions have not been completely effective in preventing recurrence of these problems. Our concerns in this area were more fully discussed during the November 12, 1991 management meeting.

It is apparent that you have been unable to: (1) instill a proper respect for adhering to established procedures, communications and awareness of plant conditions, (2) provide quality procedures, (3) appropriately supervise operations to assure procedure requirements are met, and (4) assure aggressive identification and followup of equipment deficiencies such that operators are addressing the causes and not just the symptoms as in Violation II.A. To emphasize the need for appropriate management control and cognizance in the conduct of operations, and the need for effective use of post-maintenance tests, I have been authorized, after consultation with the Director, Office of Enforcement, and the Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research to issue the enclosed Notice in the amount of \$187,500 for the violations described in the Notice. The base value of a civil penalty for each Severity Level III violation is \$50,000.

The civil penalty adjustment factors in the Enforcement Policy were considered. The base civil penalty for Violation I was reduced by 50 percent for the extensive corrective actions you initiated, as discussed above. However, the base civil penalty was increased 100 percent for your poor past performance in maintaining containment integrity at the Dresden Station. Your poor past performance was specifically demonstrated by continued failures from 1980 through 1987 to meet the LLRT acceptance criteria for containment purge valves, including valve 3-1601-24, the valve at issue here. Your performance in assuring containment integrity was also demonstrated by two recently issued escalated enforcement actions for containment integrity issues identified after this violation occurred. EA 90-168, dated November 28, 1990, concerned a Severity Level III violation and a \$37,500 civil penalty for operating the plant in a configuration where a sample pump exhausted into the secondary containment with no automatic isolation capability. EA 91-014, dated April 17, 1991, concerned a Severity Level III violation and a \$100,000 civil penalty for failing to maintain primary containment integrity from February 1989 through

January 9, 1992

September 1990, due to a leaking inboard flange of an isolation valve. Mitigation for the identification and reporting adjustment factor was considered but found inappropriate because the leak was identified during an LLRT required by NRC regulation, the report of the event was also required by regulation, and an opportunity to add the LLRT requirement to the maintenance work package was missed by the shift supervisor performing the close-out review. The remaining factors in the enforcement policy were also considered, and no further adjustment to the base civil penalty was considered appropriate. Therefore, based on the above, the base civil penalty for Violation I has been increased 50 percent.

The base civil penalty for the Severity Level III problem described in Section II was mitigated by 25 percent for identification and reporting. All of the events were self-disclosing and were reported to the NRC, if required. In some cases a report was not necessary, but by promptly notifying the NRC Resident Inspector of all cases, even those that were not required to be reported, you gave the NRC an opportunity to conduct a timely review of the event. However, the full amount allowed under the Policy was not applied because the events were self-disclosing. The base civil penalty was not mitigated for corrective action in that your initial corrective actions were not sufficiently comprehensive as discussed above. The base civil penalty was escalated 100 percent for your poor past performance. There have been numerous cited and non-cited violations associated with operations personnel failure to use or follow established procedures, inadequate communications, and inattention to detail while performing operational tasks over the past two years. The base civil penalty was further escalated 50 percent for prior notice. Your audit of operations (QAA 12-91-01) conducted in April 1991 concluded that "significant problems were identified concerning procedural adherence and reluctance of operations personnel to initiate work requests or procedure changes." The corrective actions in response to the audit were insufficient to prevent some, if not all, of the four events. The other adjustment factors in the Enforcement Policy were considered and no further adjustment to the base civil penalty is considered appropriate. Therefore, based on the above, the base civil penalty for Violation II has been increased 125 percent.

The violations described in Section III of the enclosed Notice concern failure to assure that regulatory requirements and the design basis for the Unit 2 reactor building trackway outer door seal were correctly translated into procedures and instructions, and failure to follow procedures in that the trackway inner door was not continuously attended when the door was open on June 24, 1991. Although these violations were categorized at Severity Level IV, they represent a lapse in attention to detail which, in the long-term, could lead to more serious violations.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. Because the apparent root cause of

those violations is a combination of (1) management's failure to assure procedure adherence and (2) operator's failure to adhere to procedures, your response should specifically address personnel accountability at all levels. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your responses will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Public Law No. 96-511.

Sincerely,

A. Bert Davis
Regional Administrator

Enclosure:
Notice of Violation and Proposed
Imposition of Civil Penalties

cc: w/enclosure:
DCD/DCB (RIDS)
D. Galle, Vice President
BWR Operations
T. Kovach, Nuclear
Licensing Manager
C. Schroeder, Station Manager
Resident Inspectors LaSalle,
Dresden, Quad Cities
Richard Hubbard
J.W. McCaffrey, Chief
Public Utilities Division
Robert Newmann, Office of Public
Counsel, State of Illinois Center
Licensing Project Manager, NRR

YES PJP Pederson/da 1/7/92	RIII Miller 1/8/92	RIII Greenman 1/9/92	RIII * Lieberman	RIII Paperiello 1/8/92	RIII Davis 1/9
-------------------------------------	--------------------------	----------------------------	---------------------	------------------------------	----------------------

* CONCURRENCE OBTAINED BY J LIEBERMAN AND J SNIEZER ON 1/3/92,
OBTAINED BY FAX ON 1/6/92

DISTRIBUTION

SECY

CA

HThompson, DECS

JSniezek, DEDR

JLieberman, OE

WTroskoski, OE

JLuehman, OE

LChandler, OGC

JGoldberg, OGC

TMurley, NRR

JPartlow, NRR

Project Manager, NRR

Enforcement Coordinators

RI, RII, RIV, RV

FIngram, GPA/PA

DWilliams, OIG

BHayes, OI

EJordan, AEOD

OE:Chron

OE:EA (2)

DCS

State of Illinois

RAO:RIII

SLO:RIII

PAO:RIII

IMS:RIII