



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

February 24, 1995

U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Units 2 and 3
Dresden Station Unit 3 Refueling Outage 13 (D3R13)
Dresden Station Unit 2 Refueling Outage 12 (D2R13)
NRC Docket Nos. 50-237 and 50-249

The purpose of this letter is to provide an update of significant accomplishments made at Dresden Station during the Spring 1994 Unit 3 refuel outage and to reaffirm to the NRC Commonwealth Edison's (ComEd) commitment to address long standing materiel condition issues at Dresden Station. This letter is provided for your Staff's information; therefore, no NRC Staff response to this letter is requested.

Dresden Station has completed a major maintenance and refueling outage for Dresden Unit 3. Dresden completed a similar outage on Unit 2 from which startup was completed during May 1993. Significant work was performed to address outstanding safety, material condition and regulatory issues. Work was selected based upon restoring or increasing design margin in safety-related systems; addressing equipment with high repetitive failures; addressing Operator work-arounds; resolving issues from Dresden's Technical Issues List; and meeting commitments to regulatory and industry groups. The more significant accomplishments during D3R13 are listed below:

- Control circuitry on the main power transformer was modified to allow backfeeding.
- The Reactor Vessel Water Level Instrumentation System modifications (GL 84-23 and IEB 93-03) were completed.
- Margin has been restored to the Containment Cooling Service Water (CCSW) system by completely overhauling the four pumps and replacing over 100 plugged tubes in the LPCI heat exchanger.

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- Margin has been improved in the safety-related 250 Volt DC power system by the installation of an additional 250 Volt battery for main turbine loads.
- The HPCI turbine, main pump and booster pump were overhauled.
- To enhance system reliability, all eight (8) condensate and condensate booster pumps were completely overhauled and three (3) of the motors replaced.
- The reactor feed pump motors were inspected and cleaned.
- Modifications to all reactor feed pumps were completed to address repetitive seal failures.
- Twenty seven (27) large motors were replaced, rebuilt or had major maintenance performed.
- All modifications, repairs and tests have been completed on the Generic Letter 89-10, Supplement 3, "Blow-down Valves."
- Eighty (80) safety-related motor operated valves and eighty-eight (88) balance-of-plant motor operated valves have had significant maintenance or testing.
- Sixteen (16) primary containment isolation valves have been replaced.
- Two (2) feedwater check valves have been modified to address repetitive failures.

Commonwealth Edison believes that the scope of work performed during the D3R13 maintenance outage along with a similar scope performed in D2R13 during 1993 demonstrates a commitment by Commonwealth Edison to address long standing safety, materiel condition and regulatory issues at Dresden Station.

Attachment A to this letter provides a summary of the applicable NRC commitments and their status following the refueling outage. Further details on specific activities are referenced in Attachment A and provided as additional attachments to this letter. Attachment B to this letter provides a summary of items completed during the D2R13 refueling outage which ended with the Unit 2 startup on May 25, 1993.

February 24, 1995

If there are any questions or comments on this information, please contact this office.

Sincerely,



Peter L. Piet
Nuclear Licensing Administrator

Attachments: A - Summary of D3R13 Outage Work on Regulatory Related Items
B - Summary of D2R13 Outage Work on Regulatory Related Items

cc: J. B. Martin, Regional Administrator - RIII
J. F. Stang, Project Manager - NRR
M. N. Leach, Senior Resident Inspector - Dresden
Office of Nuclear Safety - IDNS

ATTACHMENT A
SUMMARY OF D3R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
M75658; M87943	(a) Piet letter to Murley, 9/30/92	GL 89-10, Supplement 3 - MOVs	For a more complete discussion concerning this issue, see Attachment A.1 to this letter.
M71291	(b) Piet letter to Murley, 6/15/92	IEB 88-10 - MCCB's	In Reference (b), it was inadvertently noted that IEB Action 5 was completed for Dresden Unit 3. However, replacement of MCCB on the 3A 24/48 charger was not completed until D3R13. IEB 88-10, Action 5 is now complete for Unit 3.
M76552	(c) Chrzanowski letter to Murley, 3/5/93	IEB 90-01, Supplement 1 - Rosemount Transmitters - Loss of Fill Oil	In response to Item 1 of IEB 90-01, Supplement 1, the transmitters identified in the Reference (c) letter have been replaced during the Unit 3 turbine outage (April 1993). This closes out this issue for Dresden Unit 3.
N/A	(d) Piet letter to Murley, 5/18/93	Alternate Clean Make-up to the IsoCondenser with Alternate Power Supply	The IsoCondenser make-up system tie-in to the existing make-up demin line to the D3 IsoCondenser was completed during D3R13. The AC motor on the IsoCondenser make-up valve 3-4399-74 was replaced with a DC motor. Also, the power supply was swapped from MCC 39-3 to 250 VDC MCC 3A.
M73996	(e) Piet letter to Murley, 04/29/94	GL 89-13 - Service Water	For a more complete discussion concerning this issue, see Attachment A.2 to this letter.

ATTACHMENT A
SUMMARY OF D3R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
N/A	(f) Richter letter to Murley, 10/3/91	Reactor Head Closure Studs	UT was performed on all 48 shroud head bolts. Crack indications were identified in 3 previously unflawed bolts (2 of which are the new resistant bolts installed during D3R12). 5 bolts identified as containing cracks during D3R12 were determined not to be flawed. Therefore, the UT was reperfomed and the results were unchanged. Shroud head bolts were redistributed around the shroud in order to evenly space the remaining unflawed bolted and to ensure that no 2 bolts in a row contained indications of cracking.
M45130	(g) Stols letter to Murley, 8/27/90	GL 84-23 - Reactor Vessel Water Level Instrumentation - Loops A & B	This modification was completed during D3R13 for Dresden Unit 3 to address concerns from GE SIL No. 299.
M59090	(h) Schrage letter to Murley, 11/13/92	ATWS ARI - Rosemount Trip Units - ATWS Diversity	The trip units in question were replaced on Dresden Unit 3 to satisfy the requirement of the 10 CFR 50.62 ATWS diversity rule which requires equipment in the ATWS trip system to be diverse from equipment in RPS. This closes out the issue for Dresden Station.
N/A	(i) Boger letter to Kovach, 2/6/92	Two-Ply-Containment Penetration Bellows	During the D3R13 outage, four non-type B testable bellows were replaced with bellows assemblies of a new design. Penetrations X-125, X-111A, X-138 and X-149B were replaced with a design that allows the bellows to be challenged during its Type B local leak rate test.

ATTACHMENT A
SUMMARY OF D3R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
M84946	(i) Siegel letter to Kovach, 12/5/92	GL 88-01 - CRC Weld Overlay	A corrosion resistant cladding (CRC) was installed on isolation condenser piping at containment penetration X-108A.
	(j) Olshan letter to Kovach, 11/13/90	DCRDR	For a more complete discussion concerning this issue, see Attachment B.4 to this letter.
M68540	(k) Richter letter to Murley, 2/15/91	Station Blackout	The 4 kV bus tie between Bus 23-1 and Bus 33-1 was completed during D3R13.
M89004; M89005	(l) Stang letter to Farrar, 6/16/94	Single Loop Operation Tech Spec	Tech Spec implemented for usage during the Unit 3 outage.
M83981; M83980	(m) Stang letter to Farrar, 4/5/94	Containment Air Lock Tech Spec	Tech Spec implemented for usage during the Unit 3 outage.
M84277	(n) Stang letter to Farrar, 7/6/94	RVLIS Tech Spec	Tech Spec implemented for usage during the Unit 3 outage.

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SUMMARY OF D3R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
	(o) Kovach letter to NRC, 11/4/91	EDSFI MCC/Bus Mods	During D3R13, work was performed to upgrade the 250 MVA buses 23, 24, 33 and 34 with 350 MVA equipment for bus 33.
	(p) Stang letter to Farrar, 7/21/94	Core Shroud Cracking	Inspections completed on all horizontal welds (H1-H7). Analyses performed to support the safe operation of Dresden Unit 3 for the upcoming cycle of operation.
M71654	(q) Taylor letter to USNRC, 11/7/90	GL 88-14 Instrument Air	Commitments made in Reference (q) have been completed for Dresden Unit 3.
M81917	(r) Richter letter to Murley, 11/15/91	250 Volt Battery	Non-safety-related 250 VDC batteries, chargers and MCCs were installed during D3R13. The only load on the batteries at this time is the Unit 3 Main Transformer Emergency Bearing Oil Pump (EBOP).

ATTACHMENT A.1

Generic Letter 89-10, Supplement 3 MOV Concerns

NRC GL 89-10, Supplement 3 addressed NRC concerns towards possible deficiencies in high energy line break isolation valve design and the ability of these valves to function as designed. During the outage, all Unit 3 blowdown valves were modified to the requirements of the generic letter. The following is a list of the Unit 3 blowdown valves for which the deficiencies were remedied:

RWCU:	3-1201-1
	3-1201-2
Iso Cond:	3-1301-1
	3-1301-2
	3-1301-3
	3-1301-4
HPCI:	3-2301-4
	3-2301-5

The above blowdown valves have been fully upgraded. The design valve factors used for the upgrades have been validated by dynamic blowdown testing of Crane Valves by ComEd, Crane and Wylie Laboratories. Therefore, no further actions per GL 89-10, Supplement 3 are required.

ATTACHMENT A.2

Generic Letter 89-13, "Service Water Systems Affecting Safety Related Equipment"

The following items were completed in response to NRC Generic Letter 89-13, "Service Water System (SWS) Problems Affecting Safety Related Equipment", during the D3R13 refuel outage.

ITEM I: Inspect the SWS intake structure for biological fouling, sediment, erosion and corrosion using intake structure inspections and chlorination.

ACTION: The zebra mussel and sediment inspection of the intake structure was completed in June 1994. Scott Diving Service mapped and documented the conditions of the 3A, 3B, 3C Service/Circulating Water intake bay, and the DGCW piping (located in bay 3A and 3B). The divers reported small, scattered zebra mussel populations of approximately 20-30 adults/sq. ft. over sections of walls located in the Unit 3 intake bays. Corrective actions to reduce the zebra mussel population included mechanical removal of zebra mussels in all three intake bays.

ITEM II: Perform Safety Related SWS Heat exchanger test/inspections and cleaning.

ACTION: The Unit 3 DGCW heat exchangers (EPN 3-6669A and B) were replaced. "As found" heat exchanger inspections found the exchangers to be less than 5% plugged with biofouling. The DG heat exchangers were monitored per DOS 6600-01, and the differential pressure (DP) and DGCW flow was found to be 2.0 psid and 980 gpm, respectively. These values were found to be acceptable.

The Unit 3B LPCI room cooler was inspected and cleaned. System Engineering performed "as found" cooler inspections. The cooler was found to be less than 5% plugged with clam shells and debris. Maintenance then cleaned the cooler and heads. After the coolers were cleaned, System Engineering performed an "as left" inspection, and then maintenance replaced the heads. Maintenance also performed maintenance on the cooler isolation valves. The cooler PMT was successfully completed.

The Unit 3 HPCI room cooler was inspected and cleaned. System Engineering performed "as found" cooler inspections. The cooler was found to be less than 5% plugged with debris. Maintenance then cleaned the cooler and heads. Maintenance cleaned the coolers, System Engineering then performed "as left" inspection, and then maintenance replaced the heads. The cooler PMT was successfully completed. Additionally, a new motor support, and drive transmission was installed.

The 3A and 3B LPCI heat exchangers were cleaned, Eddy current tested, and inspected during D3R13.

Unit 3 Containment Cooling Service Water (CCSW) pump room coolers were tested for differential pressure and flow. CCSW B cooler was found to have a pressure and flow of 3 psid and 63 gpm. CCSW A coolers was found to have a pressure and flow of 3 psid and 72 gpm. These values were within the acceptance criteria.

ITEM III: Identify significant degradation of safety related SWS piping due to erosion and corrosion.

ACTION: During the D3R13 refueling outage, four SWS piping points were inspected in conjunction with the station's Erosion/Corrosion program. There were 3 low flow and 1 high flow points selected.

<u>Line No.</u>	<u>Component</u>	<u>Flow</u>	<u>Measured Thickness</u>	<u>Tmin</u>	<u>Results Acceptable</u>
3-39221B	8" pipe	low	0.246"	0.100"	yes
3-3922-8	8" pipe/elbow	low	0.284"	0.210"	yes
3-3933-4	4" pipe	low	0.232"	0.100"	yes
3-1515A-L	14" pipe/elbow	high	0.310"	0.139"	yes

ATTACHMENT B
SUMMARY OF D2R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
M75657; M87943	(a) Piet letter to Murley, 9/30/92	GL 89-10, Supplement 3 - MOVs	For details of this topic, see Attachment B.1 of this letter.
M71290	(b) Piet letter to Murley, 6/15/92	IEB 88-10 - MCCB's	The MCCB's on the HPCI Gland Seal Steam Condenser Exhauster fan and Isolation Condenser Fill Inlet Valve, MO-2-1301-10 have been replaced. Therefore, replacement of the non-traceable breakers on Unit 2 (for IEB Action 5) is complete.
M76551	(c) Chrzanowski letter to Murley, 3/5/93	IEB 90-01, Supplement 1 - Rosemount Transmitters - Loss of Fill Oil	In response to Item 1 of IEB 90-01, Supplement 1, the six (6) transmitters identified in the Reference (c) letter have been replaced during D2R13 and the Unit 3 turbine outage. This closes out this issue for Dresden Unit 2.
N/A	(d) Piet letter to Murley, 5/18/93	Alternate Clean Make-up to the IsoCondener with Alternate Power Supply	A modified Unit 2 design requires installation of a 250 VDC bus (scheduled for D2R14). The new diesel driven pumps are installed and are currently in the testing phase.
N/A	(e) Ring letter to Reed, 12/20/91	EDSFI - Fuel Oil Storage Tank Level - URI 91-201-08	CECo evaluated EDG fuel oil day tank instrumentation design changes to assure four hours of fuel will be automatically maintained in the day tanks. A complete discussion of our evaluation is provided as Attachment B.2 to this letter.

ATTACHMENT B
SUMMARY OF D2R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
M73996	(f) Piet letter to Murley, 05/28/93	GL 89-13 - Service Water	For a more complete discussion concerning this issue, see Attachment B.3 to this letter.
N/A	(g) Rausch letter to Keppler, 11/9/81	CCSW Keep-Fill System	CECo originally committed to install a fill line from the diesel generator cooling water system to the CCSW system to preclude the potential for CCSW water hammer. This modification was completed in 1981. However, due to the new system alignment resulting from the ECCS Room Coolers configuration, a minor plant change was performed to add a new keep fill system for CCSW. The new keep-fill system is fed directly from DG cooling water independent of the DG cooling supply to the ECCS Room Coolers. This change allows the system to maintain CCSW piping pressurized and filled under a loss of all A/C power.
N/A	(h) N/A	Shroud Head Access Hole Covers	General Electric Company Services Information Letter (SIL) 462 informed owners of GE BWRs that Alloy 600 shroud access hole covers were susceptible to stress corrosion cracking. Dresden addressed this industry concern by replacing the existing welded covers with bolted assemblies during D2R13.

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TAC NO.	References	Subject	Discussion
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M45129	(i) Richter letter to Murley, 10/3/91	Reactor Head Closure Studs	Enhanced ultrasonic examination of all 92 reactor head studs on Unit 2 has been performed. No evidence of cracking was identified. Following this examination, 14 non-cattle chute studs were removed from the flange and examined by magnetic particle method. No evidence of cracking was detected. All planned corrective actions identified in LER #91-002-1, Docket #50-237 have been completed in the D2R13 outage.
N/A	(j) Stols letter to Murley, 8/27/90	GL 84-23 - Reactor Vessel Water Level Instrumentation - Loops A & B	This modification was completed during D2R13 for Dresden Unit 2 to address concerns from GE SIL No. 299.
N/A	(k) Schrage letter to Murley, 11/13/92	ATWS ARI - Rosemount Trip Units - ATWS Diversity	The trip units in question were replaced on Dresden Unit 2 to satisfy the requirement of the 10 CFR 50.62 ATWS diversity rule which requires equipment in the ATWS trip system to be diverse from equipment in RPS. This closes out the issue for Dresden Unit 2.

ATTACHMENT B
SUMMARY OF D2R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
N/A	(l) Boger letter to Kovach, 2/6/92	Two-Ply Containment Penetration Bellows	During the D2R13 refuel outage, four non-Type B testable bellows were replaced with bellow assemblies of a new design. Penetrations X-113, X-125, X-149A, and X-149B were replaced with a design which provides for increased space between the plies, thereby allowing the total surface of the bellows to be challenged during its Type B local leak rate test.
M82945; M82946; M83716	(m) Siegel letter to Kovach, 12/5/92	Re-Classification of Welds	Dresden committed to inspect weld 16-8 (line # 2-1001B-16"), measure the ferrite in the two recirculation pump-to-cast SS elbow welds, and inspect weld PS2A-202-1B (line # 2-0202B-28") during the outage. The status on all of these safety related IGSCC weldments examined were consistent with previous examination reports from past refuel outages. No propogation of crack growth was witnessed.
	(n) N/A	CCSW Flow Orifices	Prior to D2R13, it was discovered that CCSW flow orifices were installed backwards. The mis-positioned flow orifices on CCSW on Dresden Unit 2 were replaced and properly oriented during D2R13.
M74864	(o) Kovach letter to Murley, 09/25/92.	GL 89-16 - Hardened Vent Modifications	All modification work is complete for Dresden Unit 2.

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SUMMARY OF D2R13 OUTAGE WORK ON REGULATORY RELATED ITEMS

TAC NO.	References	Subject	Discussion
M82945; M82946; M83716	(p) Siegel letter to Kovach, 4/29/92	GL 88-01 - CRC Weld Overlay Installed	The completed modification applied Corrosion Resistant Cladding (CRC) to the inaccessible welds within penetrations X-109B and X-108A on the IsoCondenser.
	(q) Silady letter to Murley, 3/13/90	DCRDR	See Attachment B.4.
	(r) Richter letter to Murley, 2/15/91	Station Blackout	1) The power source for the Unit 2 IsoCondenser level transmitter has relocated to an essential service uninterruptible power source; 2) Cross-tie mods have been completed for Dresden Unit 2. These enhancements will not be operational until D3R13 outage, when the Unit 3 portion of the modifications are scheduled for completion.
	(s) Siegel letter to Kovach, 11/23/92	MCPR Safety Limit Tech Spec	Tech Spec implemented for usage during the Unit 2 outage.
	(t) Stang letter to Kovach, 3/3/93	P-T Curve Tech Spec	Tech Spec implemented for usage during the Unit 2 outage.

ATTACHMENT B
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TAC NO.	References	Subject	Discussion
	(u) Siegel letter to Kovach, 2/11/93	Table 3.7.1 Tech Spec	Tech Spec implemented for usage during the Unit 2 outage.
	(v) Kovach letter to NRC, 11/4/91	EDSFI MCC/Bus Mods	Work on the 4KV switchgear enhancement project, which includes upgrading 4 buses from 250MVA to 350MVA, is on-going. The first enhancement is scheduled to be performed during D3R13 for bus 33.
	(w) Silady letter to Murley, 10/28/87	RG 1.97 Post-Accident Monitoring	Modifications have been completed to provide RG 1.97 Category 2 flow instrumentation on the D/G cooling water system.
M69132	(x) Piet letter to Murley, 8/20/93	Generic Letter 88-01; RWCU weld inspection/repair	Inspections completed for D2R13. Results of inspections were provided in Reference (x), along with commitment modifications.
M81917	(y) Richter letter to Murley 11/15/91	Commitment for modification to remove the main turbine EBOP load from the 250 volt battery	Unit 2 modification installation is complete.

ATTACHMENT B
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TAC NO.	References	Subject	Discussion
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M71653	(z) Taylor letter to USNRC, 11/7/90	GL 88-14 Instrument Air	The actions listed in Reference (z) have been completed for Dresden Unit 2.
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ATTACHMENT B.1

Generic Letter 89-10, Supplement 3 MOV Concerns

NRC GL 89-10, Supplement 3 addressed NRC concerns towards possible deficiencies in high energy line break isolation valve design and the ability of these valves to function as designed. During the outage, all Unit 2 blowdown valves were modified to the ComEd commitments to meet the requirements of the Generic Letter. The following is a list of the Unit 2 blowdown valves for which the commitments were met:

RWCU:	2-1201-1
	2-1201-2
Iso Cond:	2-1301-1
	2-1301-2
	2-1301-3
	2-1301-4
HPCI:	2-2301-4
	2-2301-5

EPRI testing issued in the Fall of 1993 indicated Crane Valves may have higher valve factors than previously assumed. Recent actual Crane Valve blowdown testing performed in the Summer of 1994 by ComEd, Crane and Wylie Laboratories has determined that higher design valve factors are appropriate for the current configuration of some Unit 2 blowdown valves. Additional modifications are planned for D2R14 to increase margin.

ATTACHMENT B.2

EDSFI - Fuel Oil Storage Tank Level: URI 91-201-08

During the Dresden Station Electrical Distribution System Functional Inspection, Unresolved Item 91-201-08 identified a deviation from the FSAR concerning available fuel in the Emergency Diesel Generator Day Tanks. In response to this finding, Dresden Station performed manual actions to maintain the levels in each Emergency Diesel Generator Day Tank above the level which provides greater than four hours of operation at rated load. Additionally, fuel consumption rates for each diesel generator were measured on a semi-annual basis to verify that the assumed consumption rates were accurate.

The requirement to manually control the Diesel Generator Day Tank at a four hour level has been revised based on the one hour day tank level and the safety related, seismic fuel oil transfer system, which assures the availability of greater than four hours of fuel oil. Accordingly, the frequency of measuring the Diesel Generator fuel consumption has been changed to eighteen months.

To support this revision, Dresden Station has completed several actions, including: a review of the design basis for the Emergency Diesel Generator required day tank level, upgrading the Diesel Generator Fuel Oil Transfer System to Safety-Related status, and seismically supporting this fuel oil transfer system. A revision to the FSAR has been performed in accordance with 10 CFR 50.59 to clarify the minimum required level maintained in the Diesel Generator day tank. The minimum level required assures greater than one hour of diesel generator operation at 10% above rated load (205 gallons). Since the automatic fuel oil transfer pump start setpoint is greater than the low level alarm setpoint, and since both setpoints are at level significantly greater than 205 gallons, this setpoint assures that greater than one hour exists for the operator to respond to a failure of the fuel oil transfer system. This is consistent with Standardized Technical Specification Section 3.8 and the original General Electric design specification. No additional actions concerning Diesel Generator Day Tank Level are planned at this time.

ATTACHMENT B.3

Generic Letter 89-13, "Service Water Systems Affecting Safety Related Equipment"

The following items were completed in response to NRC Generic Letter 89-13, "Service Water System (SWS) Problems Affecting Safety Related Equipment", during the D2R13 refuel outage..

ITEM I: Inspect the SWS intake structure for biological fouling, sediment, erosion and corrosion using intake structure inspections and chlorination.

ACTION: Mechanical removal of zebra mussels in all intake bays on both Unit 2 and Unit 3 was performed.

A chemical feed skid was developed to inject hypochlorite into the Unit 2, Unit 2/3, and Unit 3 Diesel Generator cooling water system (DGCW) during operational surveillances, or whenever the system is operated. This hypochlorite system will reduce biofouling, microbiological activity and corrosion.

A new chemical feed trailer, replacing the old trailer, was installed near the Unit 2/3 crib house and will significantly increase the chemical feed system reliability.

ITEM II: Perform Safety Related SWS Heat exchanger test/inspections and cleaning.

ACTION: Due to an unsuccessful post maintenance test, the Unit 2 DGSW coolers were replaced with stainless steel tube heat exchangers.

The Unit 2 Low Pressure Coolant Injection (LPCI) room coolers and High Pressure Coolant Injection (HPCI) rooms cooler were inspected and cleaned. Due to inspection results, inspection and cleaning was expanded to the Unit 3 LPCI and HPCI room coolers. In addition, the Unit 2/3 control room HVAC air handling units were inspected and cleaned.

ITEM III: Identify significant degradation of safety related SWS piping due to erosion and corrosion.

ACTION: Seven SWS piping points were inspected in conjunction with the station's Erosion/Corrosion program. All seven inspection points were acceptable.

ATTACHMENT B.4

DCRDR Annunciator Modifications

During the recent refueling outage for Dresden Unit 2 (D2R13), Dresden completed implementation of the DCRDR modifications for Dresden Unit 2. The DCRDR annunciator modifications have already been completed for Dresden Unit 3. No NRC Staff action is proposed with this letter.

Prior to final installation of the DCRDR annunciator modifications, Commonwealth Edison re-evaluated specific characteristics of the originally proposed annunciator system. Certain characteristics of the initial design for the ringback/reflash features of Dresden's design were determined to be unacceptable from a Human Factors standpoint. Therefore, a re-design of the annunciator system was proposed. The purpose of the re-design is summarized as follows: reduce unnecessary alarm and ringback horn noise; provide a direct correspondence between flashing windows and main panel alarm horns; reduce unnecessary flashing windows during normal operations and transients; eliminate reflash or ringback on non-important windows; reduce the potential for alarm horn failure; provide a more distinctive sound from the main panel horns so operators can more easily distinguish panel horns; reduce the number of Sequence Event Recorder (SER) points removed from scan by operators; provide an audible reflash and ringback signal to direct operators attention to the SER CRT; allow for non-outage implementation of the modification to allow earlier installation of the modifications.

The reflash horn is a Betatone III horn. The horn receives its activation signal from the Beta SER computer output relays. The reflash horn is connected to only selected multiple input windows (MIW). The reflash horn is interlocked with the main panel horns so that the first input to selected MIWs only activates the main panel horn and not the reflash horn. The 2nd, 3rd, etc. alarm input on MIWs only activates the reflash horn and not the main panel horn. The window tile only flashes on the first input. The 2nd, 3rd, etc. alarm input on MIWs does not reflash the window tile. When the reflash horn sounds, the operator silences the new reflash horn using any of the main panel silence pushbuttons. The human engineering discrepancies (HED) associated with the reflash modification were 191, 231, and 343.

The ringback horn is a Betatone III horn. The horn receives its activation signal from the Beta SER computer output relays. The ringback horn is connected to only selected windows requiring the ringback features. When an alarm input resets it activates the self acknowledging ringback horn. The ringback horn activates for only a preset time delay of approximately 1 to 2 seconds. The ringback horn is interlocked with the main panel horns and the reflash horn. Upon simultaneous activation of any main panel alarm horn and the ringback horn, only the alarm horns are heard. Also, upon simultaneous activation of the reflash horn and the ringback horn, only the reflash horn is heard. The main panel alarm horns and the reflash horn always take precedence over the ringback horn. The window tile does not slow flash when the alarm inputs reset. Since all ringback information appears on the SER CRT, the activation of the ringback information appears on the SER CRT. The activation of the ringback horn correctly draws the operator's attention to the CRT. The HEDs associated with the ringback modification were 191, 231, 281.

The final modification design was reviewed by CECO's Human Factors Engineering Staff and found to be acceptable. There were no additional human factors concerns raised by the alternate annunciator design. In addition, there were no additional HEDs introduced by the final enhanced annunciator design.