



Commonwealth Edison
72 West Adams Street, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690 - 0767

April 11, 1989

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

**Subject: Dresden Nuclear Power Station Unit 2
Status of the Systematic Evaluation
Program (SEP) for Dresden Unit 2
NRC Docket No. 50-237**

Dear Dr. Murley:

This letter provides an update on the status of the Dresden 2 Systematic Evaluation Program (SEP).

BACKGROUND

In 1977, the U.S. Nuclear Regulatory Commission initiated the SEP to review the designs of older operating nuclear reactor plants in order to reconfirm and document their safety. The NRC selected 11 of the oldest plants for SEP. The list consisted of Dresden 1 and plants under review for the conversion of their Provisional Operating Licenses (POLs) to Full Term Operating Licenses (FTOLs), which included Dresden 2. Dresden 1 was later deleted from SEP because extensive modifications were anticipated.

The NRC selected 137 different areas of "topics" for comparison of the as-built design with current criteria. Of these topics, 49 were deleted from the Dresden 2 SEP Review because they were being reviewed by other programs, such as Three Mile Island Action Plans, or were not applicable to a BWR Plant. This left 88 topics to be reviewed.

By 1983, the NRC had reviewed all 88 topics with respect to Dresden 2. They concluded that "54 met current criteria or were acceptable on another defined basis." Their conclusion concerning the remaining 34 topics was that the Dresden 2 design differed from current criteria and that further evaluation was required. In February 1983, the NRC issued NUREG-0823, the Integrated Plant Safety Assessment Report (IPSAR) for Dresden 2, which described the 34 remaining SEP topics and the basis for closure of the first 54 topics.

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STATUS OF THE 34 REMAINING TOPICS

Attachment 1 of this letter provides the status of the 34 topics described in NUREG-0823. It is important to note that many of these topics were subdivided into individual issues, or sections. Addendum A of Attachment 1 describes that status of each section as referenced in the NUREG.

CONCLUSION

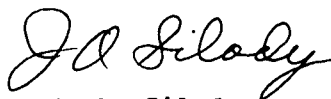
Responses have been submitted for all the topics which required further evaluation as described in the NUREG. Of the 34 open topics, CECO records indicate that the NRC has previously determined that 23 are complete. Completion is documented by a final Safety Evaluation Report (SER) or by an On-Site Inspection Report. It is understood that most of CECO's responses to the 11 remaining topics have been reviewed by the NRC but that their closure bases are still being documented. The remaining SER(s) are projected to be issued within three months based on recent discussions with B.L. Siegel of your staff.

Please note that one of the 11 topics mentioned above, Seismic Design Considerations, III-6, was divided into five sections, one of which has been deferred to the Seismic Qualification Utility Group (SQUG) for ongoing evaluation.

The attached status list is provided to facilitate comparisons with Staff records and to support our mutual objective of final closure of all SEP topics. This, in turn, will allow the Dresden 2 FTOL conversion to progress.

Please contact this office should further information be required.

Very truly yours,



J. A. Silady
Nuclear Licensing Administrator

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Attachment

cc: A.B. Davis - Regional Administrator, RIII
B.L. Siegel - Project Manager, NRR
S.G. DuPont - Senior Resident Inspector, Dresden

STATUS OF SEP TOPICS

NUREG-0823, dated February 1983, identifies 34 topics that describe certain aspects of plant design that differ from current criteria. Responses to these items have been submitted for SEP Staff review. The following provides our status of these items. Addendum A of this report provides additional information about each item.

<u>SER Received</u>	<u>SER Not Received</u>
<u>TOPIC</u>	<u>TOPIC</u>
III-3.C	II-3.B
III-4.B	II-3.B.1
III-5.A	II-3.C
III-5.B	III-1
III-8.A	III-2
III-10.A	III-4.A
V-6	III-6
V-10.B	III-7.B
V-11.A	V-5
V-11.B	VI-4
VI-6	VI-10.B
VI-7.A.4	
VI-7.C.1	
VI-10.A	
VII-1.A	
VII-3	
VIII-2	
VIII-3.A	
VIII-3.B	
IX-5	
XV-1	
XV-16	
XV-18	
	11 Topics
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23 Topics	

Total Topics above: 23 + 11 = 34

Final responses to the NRC SEP Staff have been made on all 34 topics.

Some evaluation is still being performed on the following Topics. See Addendum A for details.

Topic VI-4
Sections 4.18.3 & 4.18.6

Containment Isolation System (Addendum A, Page 8)

Topic VI-7.C.1

Appendix K - Electrical Instrumentation and Control Re-reviews (Addendum A, Page 9)

*Topic VIII-4

Electrical Penetrations of Reactor Containment (Addendum A, Page 12)

*Reviewed prior to NUREG-0823, therefore not part of the NUREG.

Modifications required to complete commitment

The following items require completion of modifications.

Topic II-3.B,
Section 4.1.4

Flooding Potential and Protection
Requirements (Addendum A, Page 1)

Install a level monitor in the intake flume
to alert the operators of high water level.

Topic VIII-3.B
Section 4.28

DC Power System Bus Voltage Monitoring and
Annunciation (Addendum A, Page 12)

Install DC Monitoring on the 24/48 VDC System

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SEP TOPICS (34 ITEMS REF NUREG-0823)

Status Codes: C = Completed by CECO
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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
II-3.B	4.1.1	Design Basis Groundwater Level	None required per NUREG - 0823.	C	Yes
II-3.B.1					
II-3.C Groundwater Level	4.1.2	Probable Maximum Flood	Committed to revise procedure per CECo letter to NRC dated 11-17-82. This was completed by Procedure. EPIP 200-11 Rev. 1, 7-12-84.	C	No
	4.1.3	Roof Loading	Committed to modify roof parapets by letter to NRC dated 11-17-82. Mod. M12-2/3-83-2 Completed 6-1-85.	C	No
	4.1.4	Flood Emergency Plan	Committed to revise the procedure per CECO letters to NRC dated 11-17-82, 11-16-83. This was completed by Procedure. EPIP 200-11, Rev. 1, Committed to install level gage in the Unit 2/3 cribhouse intake canal. Modification to be requested by 6/89.	P	No
III-1 Classification of Structures, Systems, and Components	4.2.1	Radiography Requirements	Response submitted per CECO letter to NRC, dated 4-20-87 and 12-6-87. Resolution per SER dated 6-28-88.	C	Yes
	4.2.2	Fracture Toughness	Initial response submitted per CECO letter to NRC dated 11-22-82. Response submitted to NRC, dated 4-20-87 and 11-30-88.	C	No

SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
III-2 Wind and Tornado Loadings	4.3.1	RB Structure Above the Operating Floor	None Required per NUREG-0823.	C	Yes
	4.3.2	Ventilation Stack	Followup concerns answered by CECo letter to NRC 11-4-83.	C	No
	4.3.3	Components not enclosed in qualified structures.	Response submitted per CECo letter to NRC, dated 11-22-82. In staff review per NUREG-0823.	C	No
	4.3.4	Roof Decks	Response submitted per CECo letter to NRC, dated 11-22-82. In staff review per NUREG-0823.	C	No
	4.3.5	Load Combinations	Addressed as part of Topic III-7.B, per NUREG 0823.	C	No

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NRC
 APPROVAL
 RECEIVED

SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
III-3.C Water Control Structures	4.4.1	Flow-Regulation Station	None required per NUREG - 0823.	C	Yes
	4.4.2	Intake and Discharge Structures	None required per NUREG - 0823.	C	Yes
	4.4.3	Inspection Program	Committed to revise procedure per CECo letter to NRC dated 9-2-82. Procedure checked by Site Inspector 4-21-84.	C	Yes
III-4.A Tornado Missiles	4.5.1	Service Water System	Response submitted per CECo letter to NRC dated 12-6-82, which committed to resolve issue as part of TMI Action Plan Item III.D.3.4.	C	Yes
	4.5.2	Station Battery Systems	None required per NUREG - 0823.	C	Yes
	4.5.3	Diesel Generator Ventilation	Response submitted per CECo letters to NRC dated 3-16-83, 9-19-83.	C	No

SEP TOPICS (34 ITEMS REF NUREG-0823)

1-89

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NRC
 APPROVAL
 RECEIVED

SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
	4.5.4	Exterior Tanks	Response submitted per CECO letters to NRC dated 3-16-83, 9-19-83, 6-7-84. Additional information to describe safety-related equipment behind "C" wall by 7-1-87 transmitted to NRC 6-26-87.	C	No
III-4.B	4.6	Turbine Missiles	Resolution complete per NRC letter to CECO, LS05-83-05-069, dated 5-31-83.	C	Yes
III-5.A Pipe Breaks Inside Containment - HELB	4.7.1	Jet Impingement on Target Pipe	Resolution complete per NRC letter to CECO, LS05-83-10-063, dated 10-27-83.	C	Yes
	4.7.2	Broken-Pipe Impact on Target Pipe	Resolution complete per same letter as for Sec. 4.7.1.	C	Yes
	4.7.3	Detectability Requirements	Resolution complete per same letter as for Sec. 4.7.1.	C	Yes
	4.7.4	Criteria Implementation	Resolution complete per same letter as for Sec. 4.7.1.	C	Yes
III-5.B	4.8	Pipe Break Outside Containment	None required per NUREG - 0823.	C	Yes

SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
III-6 Seismic Design Considerations	4.9	Battery Racks	The concern expressed in section 6.3.2.1 of the SER, P. O'Connor (NRC) to L. DeGeorge (CECo), dated June 30, 1982 recommended that the wooden battens be strengthened or replaced. The 125V and 250V Battery Racks have been replaced. The racks are seismically designed.	C	Yes
	4.9.1	Piping Systems	Resolved as part of I.E. Bulletin 79-14 effort.	C	Yes
	4.9.2	Mechanical Equipment	(1) Pipe Stress resulting from MOV's: Response submitted per CECO letters to NRC dated 7-7-82, 9-3-82, and 11-3-82. In staff review per NUREG - 0823. (2) RPV Internal Supports Engineering Information submitted by CECO letters dated 6-8-81 and 12-28-84. In staff review per NUREG - 0823. (3) Recirculation Pump Supports Response submitted per CECO letters dated 3-10-82 and 7-22-83.	C	No
	4.9.3	Qualification of Cable Trays	Resolution through Owners Group. Report submitted 1-9-84. Further investigation To be handled by SQUG.	C	No
	4.9.4	Availability of Safety Related Equipment function.	Resolution as part of USI-A46 per NUREG - 0823.	C	Yes

SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
III-7.B	4.10	Design Codes, Design Criteria, Load Combinations, and Reactor Cavity Design Criteria.	Response submitted per CECo letter to NRC dated 8-2-82 and 7-12-84.	C	No
III-8.A	4.11	Loose-part Monitoring and Core Barrel Vibration Monitoring.	No action required at this time per NUREG - 0823. Future action, if required, will come from NRC via implementation of RG-1.133.	C	Yes
III-10.A Protection for Motors of MOV's	4.12.1	Thermal Overloads	Response submitted per CECo letters to NRC dated 11-17-83, and 1-2-85. Resolved per NRC letter to CECo 7-9-85; LS05-85-07-015.	C	Yes
	4.12.2	Torque Switches	Resolved thru plant review, Ref. NUREG - 0823.	C	Yes
V-5 Reactor Coolant Pressure Boundry - Leak Detection	4.13.1	System Sensitivity	Resolved per letter D.M. Crutchfield (NRC) to D.L. Farrar (CECo) dated 2-13-84.	C	Yes
	4.13.2	Seismic Qualification	Resolved per letter from B. Rybak (CECo) to R. Gilbert (NRC), 4-14-84.	C	No
	4.13.3	System Testability	None required per NUREG - 0823.	C	Yes

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
V-6	4.14	Reactor Vessel Integrity	None required per NUREG - 0823.	C	Yes
V-10.B	4.15	RHR System Reliability	To be resolved as part of Appendix "R" review, per NUREG - 0823.	C	Yes
V-11.A	4.16	Requirements for Isolation of High and Low Pressure Systems.	None required per NUREG - 0823.	C	Yes
V-11.B	4.17	RHR System Interlock Requirements	To be resolved as part of Appendix "R" review, per NUREG - 0823.	C	Yes
VI-4 Containment Isolation	4.18.1	Locked-Closed Valves	Response submitted per CECO letter to NRC dated 11-16-83, 3-6-84.	C	Yes
	4.18.2	Leakage Detection	Resolved by Procedure and Mods M12-2(3)-83-30 stated in letter from B. Rybak (CECo) to R. Gilbert (NRC), 4-14-84.	C	Yes

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
	4.18.3	Manual Isolation Valves	By letter dated 11-18-82 CECO committed to locking valves 4327-500, 1916-500, 4327-502, and 4609-501 and revising the locked valve checklists. Verify by 6-1-89 that all valves have been added.	P	No
	4.18.4	Check Valve as Isolation Valves.	None required per NUREG - 0823.	C	Yes
	4.18.5	Valve Location	None required per NUREG - 0823.	C	Yes
	4.18.6	Branch lines with Single Isolation Valves.	By letter dated 11-18-82 CECO committed to add second isolation valves downstream of LPCI Valve 1501-70A,B and 1599-27A,B. Also downstream of core spray valves 1402-10A,B. These valves are to be locked and added to the locked valve checklist. Redundant valves have been installed and are to be added to locked-valve checklists. Verify by 6-1-89 that all valves have been added.	P	Yes
VI-6	4.19	Containment Leak Testing	Review covered by Appendix "J" review.	C	Yes
VI-7.A.4	4.20	Core Spray Nozzle Effectiveness	None required at this time. Being reviewed by NRC as part of Generic Issue A-16.	C	Yes

DRESDEN UNIT 2

SEP TOPICS (34 ITEMS REF NUREG-0823)

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NRC
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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
VI-7.C.1 Electrical Instrumentation and Control	4.21.1	Breaker Adequacy	Resolution complete per NRC letter to CECO, LS05-84-01-035, dated 1-24-84.	C	Yes
	4.21.2	Disconnect Links	Procedure checklist DOP. 6900-E2 (Rev. 7) has been enacted 6/86. A copy was submitted to the NRC on 5-12-87. No further action required per SER dated 11-16-87.	C	Yes
	4.21.3	Use of breakers - during power operations.	Completed per review by Site Inspector.	C	Yes
	4.21.4	Operation with failed battery.	Resolution complete per Tech. Spec. AM87, 5-30-85, to DPR-19.	C	Yes
	4.21.5	Isolation of Class 1E Sources from non Class 1E Loads.	Response submitted 3-6-85. Received request for additional information 7-9-85. Final response submitted to NRC 5-12-87. No further action required per SER dated 11-16-87. Verify accuracy of SER by 7-1-89.	C	Yes
VI-10.A	4.22	Testing of Reactor Trip System and Engineered Safety Features, including Response - Time Testing.	None required per NUREG - 0823.	C	Yes

SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
VI-10.B Shared Engineering Safety Features	4.23.1	Sharing of DC Systems	Temporary procedures in place to disallow paralleling the DC system to search for grounds. Final response submitted to NRC 10-3-88.	C	No
	4.23.2	Diesel Generator Bypass	Completed per NUREG - 0823.	C	Yes
	4.23.3	Battery Status Indication	Addressed in Topic VIII - 3.B, Sec. 4.2.8.	C	Yes
	4.23.4	Battery Room Ventilation	Addressed by Topic IX-5, Sec. 4.2.9.1.	C	Yes
VII-1.A Isolation of RPS from Non-Safety Systems	4.24.1	RPS Control Systems	Response submitted per CECO letters to NRC dated 8-3-83, 11-16-83, 3-6-84, and 1-9-87. No action required per SER dated 11-20-87.	C	Yes
	4.24.2	Process Computer	Response submitted per CECO letters to NRC dated 8-3-83, 11-16-83, 3-6-84, and 1-9-87. Install I.E. Isolators to inputs of each recorder. Method of isolation accepted by NRC per SER dated 11-20-87. Mod M12-2(3)-87-43 completed on Unit 2, 12-88. Response to NRC request for additional information 2-2-89. Dresden 3 modification scheduled for November 1989 (D3R11).	C	Yes

SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
	4.24.3	RPS Channel Power Supplies	Response submitted per CECO letters to NRC dated 8-3-83, 11-16-83, 3-6-84, 8-30-84. Mod M12-81-18 completed 5-23-83 and Mod M12-3-81-18 completed 12-7-83. Considered closed by Site Inspector.	C	Yes
VII-3 Systems Required for Safe Shutdown	4.25.1	Procedures for Shutdown from Outside Control Room.	Addressed as part of Appendix "R" Fire Fire Protection Review per NUREG - 0823.	C	Yes
	4.25.2	Use of Safety Grade Systems.	Procedures revised and accepted per NUREG - 0823.	C	Yes
	4.25.3	RHR Single - Failure Criteria	Procedures reviewed as part of SEP Topic VI-10.B. Accepted per NUREG - 0823.	C	Yes
	4.25.4	Inservice Testability	Procedure DIS 1000-1 implemented 10/83 and reviewed by Site Inspector.	C	Yes
VIII-2 Onsite Emergency Power System	4.26.1	Annunciators	Resolution complete per NUREG - 0823.	C	Yes
	4.26.2	Protective Trips	Response submitted per CECO letter to NRC dated 11-16-83, 3-6-84 which committed to modifications. Mod M12-2-82-38, Mod M12-3-82-38 Mod M12-2/3-82-21. These modifications completed.	C	Yes

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
VIII-3.A	4.27	Station Battery Capacity Test Requirements	None required per NUREG - 0823.	C	Yes
VIII-3.B	4.28	DC Power System Bus Voltage Monitoring and Annunciation.	Response submitted per CECO letters to dated 10-5-82, 11-16-83, 3-6-84 which committed to modifications. MOD M12-2(3)-83-6 and M12-2-82-3 completed. Summittal to NRC made on 8/10/87 to describe the difference of monitoring design from that proposed in the 10-5-82 letter. Commitment made to add monitoring to 24/48 V System. Resolved per SER dated 6-27-88. Mod M12-2(3)-87-58 opened. Dresden 2 modification schedule for December 1990 (D2R12). Dresden 3 modification scheduled for March 1991 (D3R12).	P	Yes
VIII-4		Electrical Penetrations of Reactor Containment (FOR REFERENCE ONLY - Not included with 34 topics discussed in NUREG-0823).	SER Letter, D.M. Crutchfield (NRC) to L. DeGeorge (CECo), dated 11-30-81 stated: 1) Qualification of low voltage circuits inside containment. Completed by EQ program. 2) Demonstration of the adequacy of a representative low voltage primary protection device from 200-600 AMPS completed 5-2-88. 3) For non-IE circuits inside containment de-energize during operation, by accident signal or provide suitable backup protection. Verify accuracy of SER by 7-1-89.	P	Yes

DRESDEN UNIT 2
 SEP TOPICS (34 ITEMS REF NUREG-0823)

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SEP TOPIC NO. TITLE	SECTION NO.	SECTION TITLE	ACTION	STATUS	NRC APPROVAL RECEIVED
IX-5 Ventilation Systems	4.29.1	Battery Room Ventilation	None required per NUREG - 0823.	C	Yes
	4.29.2	LPCI/Core Spray and Diesel Generator Rooms.	None required per NUREG-0823.	C	Yes
XV-1	4.30	Increase in Feedwater Flow	None required per NUREG - 0823.	C	Yes
XV-16	4.31	Radiological Consequences of Failure of Small Lines Carrying Primary Coolant Outside Containment.	Resolved per Tech. Spec. Amendment 87 dated 5-30-85.	C	Yes
XV-18	4.32	Radiological Consequences of Main Steam Line Failure Outside Containment.	Resolved by SEP Topic XV16 Tech. Spec. Amendment 87 dated 5-30-85.	C	Yes