



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

April 16, 1993

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

Attention: Document Control Desk

Subject: Byron Station Units 1 and 2,  
(NRC Docket Numbers 50-454 and 50-455)

Braidwood Station Units 1 and 2,  
(NRC Docket Numbers 50-456 and 50-457)

Zion Station Units 1 and 2,  
(NRC Dockets 50-295 and 50-304)

Dresden Station Units 2 and 3,  
(NRC Dockets 50-237 and 50-249)

Quad Cities Station Units 1 and 2,  
(NRC Dockets 50-254 and 50-265)

LaSalle County Station Units 1 and 2,  
(NRC Dockets 50-373 and 50-374)

- References:
- (1) Letter from M.A. Jackson to U.S. NRC dated July 23, 1992.
  - (2) Letter from M.A. Jackson to Dr. T. E. Murley dated July 23, 1992.
  - (3) Letter from R.M. Pulsifer to T.J. Kovach dated August 20, 1992.
  - (4) Letter from B.L. Siegal to T.J. Kovach dated August 20, 1992.
  - (5) Letter from R.M. Pulsifer to T.J. Kovach dated November 10, 1992.

Dear Dr. Murley:

The purpose of this letter is to provide the Commonwealth Edison (CECo) response to Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers." The details of the response to this Generic Letter for Byron, Braidwood, Zion and LaSalle County Stations are contained in the attachments to this letter.

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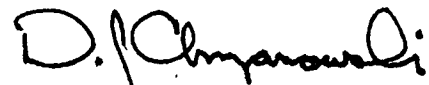
As stated in the Generic Letter: "The NRC encourages licensees to work together to develop generic solutions to the problems addressed in this generic letter." Therefore, CECO expects the resolution of Thermo-Lag concerns will be based on the NUMARC industry program. Until this program provides the needed results, CECO will maintain the necessary compensatory actions for all affected barriers.

As stated in References (1) and (2), and acknowledged and accepted in Reference (4), Thermo-Lag has not been used at Dresden and Quad Cities Stations. This statement satisfies reporting requirement number 1 of the Generic Letter and no additional actions or responses are required, therefore CECO considers the Generic Letter 92-08 issue closed for Dresden and Quad Cities Stations.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other CECO employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

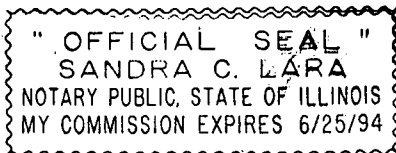
If there are any questions or comments, please contact me at (708) 663-7292.

Sincerely,



David J. Chrzanowski  
Generic Issues Administrator  
Nuclear Regulatory Services

State of Ill, County of DuPage  
Signed before me on this 16th day  
of April, 1993 by [Signature]  
Notary Public [Signature]



Dr. Murley

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Attachments: (1) Byron Station Response to Generic Letter 92-08  
(2) Braidwood Station Response to Generic Letter 92-08  
(3) Zion Station Response to Generic Letter 92-08  
(4) LaSalle County Station Response to Generic Letter  
92-08

cc: J. Martin, Regional Administrator-RIII  
J. Hickman, Byron Project Manager-NRR/PDIII-2  
R. Assa, Braidwood Project Manager-NRR/PDIII-2  
C. Shiraki, Zion Project Manager-NRR/PDIII-2  
J. Stang, Dresden Project Manager-NRR/PDIII-2  
C. Patel, Quad Cities Project Manager-NRR/PDIII-2  
R. Stransky, LaSalle Project Manager-NRR/PDIII-2  
H. Peterson, Senior Resident Inspector (Byron)  
S. DuPont, Senior Resident Inspector (Braidwood)  
J. D. Smith, Senior Resident Inspector (Zion)  
M. Leach, Senior Resident Inspector (Dresden)  
T. Taylor, Senior Resident Inspector (Quad Cities)  
D. Hills, Senior Resident Inspector (LaSalle)

**ATTACHMENT 1**  
**BYRON STATION RESPONSE TO GENERIC LETTER 92-08**

1. State whether Thermo-Lag 330-1 barriers are relied upon
  - (a) to meet 10 CFR 50.48, to achieve physical independence of electrical systems,
  - (b) to meet a condition of a plant's operating license, or
  - (c) to satisfy a licensing commitment.

**Byron Station is relying on Thermo-Lag 330-1 barriers to meet 10 CFR 50.48 and to achieve separation between redundant electrical systems. The use of these barriers is part of the station's overall Fire Protection program which is an operating license condition and a licensing commitment for Byron Station.**

2. If Thermo-Lag 330-1 barriers are used at the facility,
  - (a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

**CECO has not conducted fire endurance tests to qualify the Thermo-Lag 330-1 fire barriers used at Byron Station.**

- (b) State
  - (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations;

**The fire barrier configurations installed at Byron Station generally represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations. However, some potential deviations from tested configurations have been identified.**

**ATTACHMENT 1**  
**BYRON STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

- (2) whether or not the licensee has evaluated any deviations from the tested configurations.

**Potential deviations from tested configurations  
have not been evaluated.**

(c) State

- (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems).

**The cable ampacity derating calculations for  
Byron Station were based on as-built Thermo-Lag  
configurations.**

- (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

**CECo has reviewed the cable ampacity derating  
calculations and methodology for the Thermo-Lag  
330-1 fire barrier systems used at Byron  
Station. Based on this review, CECO has  
determined that the approach to derating cables  
is acceptable and that the derating factors are  
consistent with the corrected values of 33%  
reported in NRC Information Notice 92-46.**

3. With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative,

- (a) describe all corrective actions needed and include a schedule by which such actions shall be completed.

**In regard to items 2(a) and 2(b), CECO is an active  
participant in the NUMARC program to address the  
testing of Thermo-Lag 330-1 Fire Barriers. It is  
expected that the test results from this program  
will be provided directly to the NRC. After these**

ATTACHMENT 1  
BYRON STATION RESPONSE TO GENERIC LETTER 92-08  
(Continued)

industry tests have been accepted and approved by the NRC, CECO will incorporate, as necessary, the results of this industry program as well as the results of any self-initiated activities to assure that the barrier configurations at Byron Station meet the Fire Protection Program requirements. CECO will provide a schedule of corrective actions following NRC approval of the industry test results. These actions are consistent with those described in References (1) and (2) and accepted by the NRC in References (3) and (5).

- (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

Byron Station has, as discussed in Reference (1), initiated compensatory actions in the form of fire watches for inoperable fire barriers. These actions are consistent with station technical specifications and administrative technical requirements. When corrective actions are completed for Byron Station, written confirmation will be provided to the NRC. These actions are consistent with those described in References (1) and (2) and accepted by the NRC in References (3) and (5).

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

A list of all Thermo-Lag barriers at Byron Station was provided in References (1) and (2). The qualification of these barriers will be established after the acceptance, by the NRC, of the industry test program.

**ATTACHMENT 2**  
**BRAIDWOOD STATION RESPONSE TO GENERIC LETTER 92-08**

1. State whether Thermo-Lag 330-1 barriers are relied upon
  - (a) to meet 10 CFR 50.48, to achieve physical independence of electrical systems,
  - (b) to meet a condition of a plant's operating license, or
  - (c) to satisfy a licensing commitment.

**Braidwood Station is relying on Thermo-Lag 330-1 barriers to meet 10 CFR 50.48 and to achieve separation between redundant electrical systems. The use of these barriers is part of the station's overall Fire Protection program which is an operating license condition and a licensing commitment for Braidwood Station.**

2. If Thermo-Lag 330-1 barriers are used at the facility,
  - (a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

**CECo has not conducted fire endurance tests to qualify the Thermo-Lag 330-1 fire barriers used at Braidwood Station.**

- (b) State

- (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations;

**The fire barrier configurations installed at Braidwood Station generally represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations. However, some potential deviations from tested configurations have been identified.**

- (2) whether or not the licensee has evaluated any deviations from the tested configurations.

**Potential deviations from tested configurations have not been evaluated.**

**ATTACHMENT 2**  
**BRAIDWOOD STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

(c) State

- (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems.

**The cable ampacity derating calculations for Braidwood Station were based on as-built Thermo-Lag configurations.**

- (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

**CECo has reviewed the cable ampacity derating calculations and methodology for the Thermo-Lag 330-1 fire barrier systems used at Braidwood Station. Based on this review, CECO has determined that the approach to derating cables is acceptable and that the derating factors are consistent with the corrected values of 33% reported in NRC Information Notice 92-46.**

3. With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative,

- (a) describe all corrective actions needed and include a schedule by which such actions shall be completed.

**In regard to items 2(a) and 2(b), CECO is an active participant in the NUMARC program to address the testing of Thermo-Lag 330-1 Fire Barriers. It is expected that the test results from this program will be provided directly to the NRC. After these industry tests have been approved by the NRC, CECO will apply the results of this industry program as well as the results of any self-initiated activities to assure that the barrier configurations at Braidwood Station meet the Fire Protection Program**



**ATTACHMENT 2**  
**BRAIDWOOD STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

requirements. CECO will provide a schedule of corrective actions after NRC review of the industry program is completed. These actions are consistent to those described in References (1) and (2) and accepted by the NRC in References (3) and (5).

- b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

Braidwood Station has, as discussed in Reference (1), initiated compensatory actions in the form of fire watches for inoperable fire barriers. These actions are consistent with station technical specifications and administrative technical requirements. When corrective actions are completed for Braidwood Station, written confirmation will be provided to the NRC. These actions are consistent with those described in References (1) and (2) and accepted by the NRC in References (3) and (5).

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

In addition to the Thermo-Lag barriers provided in References (1) and (2), Braidwood Station has six (6) locations where Thermo-Lag 330-1 was used as a fire seal.

<u>Fire Zones</u>	<u>Article Protected</u>	<u>Location</u>
11.6-0 and 11.6-1	426 Aux Building, general area	electrical penetration area
3.2B-2 and 3.2C-2 (two penetrations)	2Z3 and 2Z2	lower cable spreading room
3.3C-1 and 3.3D-1 (two penetrations)	1EE3 and 1EE4	upper cable spreading room
3.3D-2 and 18.4-2	2EE4 and OB control room HVAC	upper cable spreading room

The qualification of all Thermo-Lag barriers will be established after the acceptance, by the NRC, of the industry test program.

**ATTACHMENT 3**  
**ZION STATION RESPONSE TO GENERIC LETTER 92-08**

1. State whether Thermo-Lag 330-1 barriers are relied upon
  - (a) to meet 10 CFR 50.48, to achieve physical independence of electrical systems,
  - (b) to meet a condition of a plant's operating license, or
  - (c) to satisfy a licensing commitment.

**Zion Station is relying on Thermo-Lag 330-1 barriers to meet 10 CFR 50.48 and to achieve separation between redundant electrical systems. The use of these barriers is part of the station's overall Fire Protection program and a licensing commitment for Zion Station.**

2. If Thermo-Lag 330-1 barriers are used at the facility,
  - (a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

**CECo has not conducted fire endurance tests to qualify the Thermo-Lag 330-1 fire barriers used at Zion Station.**

- (b) State
  - (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations;

**The fire barrier configurations installed at Zion Station generally represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations. However, some potential deviations from tested configurations have been identified.**

- (2) whether or not the licensee has evaluated any deviations from the tested configurations.

**Potential deviations from tested configurations have not been evaluated.**

**ATTACHMENT 3**  
**ZION STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

(c) State

- (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems.

**The cable ampacity derating calculations for Zion Station were based on as-built Thermo-Lag configurations.**

- (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

**CECo has reviewed the cable ampacity derating calculations and methodology for the Thermo-Lag 330-1 fire barrier systems used at Zion Station. Based on this review, CECo has determined that the approach to derating cables is acceptable and that the derating factors are consistent with the corrected values of 33% reported in NRC Information Notice 92-46.**

3. With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative,

- (a) describe all corrective actions needed and include a schedule by which such actions shall be completed.

**In regard to items 2(a) and 2(b), CECo is an active participant in the NUMARC program to address the testing of Thermo-Lag 330-1 Fire Barriers. It is expected that the test results from this program will be provided directly to the NRC. After these industry tests have been approved by the NRC, CECo will apply the results of this industry program as well as the results of any self-initiated activities to assure that the barrier configurations at Zion Station meet the Fire Protection Program requirements. CECo will provide a schedule of corrective actions after NRC review of the industry program is completed.**

**ATTACHMENT 3**  
**ZION STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

- (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

**Zion Station has, as discussed in Reference (1), initiated compensatory actions in the form of fire watches for inoperable fire barriers. These actions are consistent with station technical specifications and administrative requirements. When corrective actions are completed for Zion Station, written confirmation will be provided to the NRC.**

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

**A list of all Thermo-Lag barriers at Zion Station was provided in References (1) and (2). The qualification of these barriers will be established after the acceptance, by the NRC, of the industry test program.**

**ATTACHMENT 4**  
**LASALLE COUNTY STATION RESPONSE TO GENERIC LETTER 92-08**

1. State whether Thermo-Lag 330-1 barriers are relied upon.
  - (a) to meet 10 CFR 50.48, to achieve physical independence of electrical systems,
  - (b) to meet a condition of a plant's operating license, or
  - (c) to satisfy a licensing commitment.

**LaSalle Station is relying on Thermo-Lag 330-1 barriers to meet 10 CFR 50.48 and to achieve separation between redundant electrical systems. The use of these barriers is part of the station's overall Fire Protection program which is an operating license condition and a licensing commitment for LaSalle Station.**

2. If Thermo-Lag 330-1 barriers are used at the facility,
  - (a) State whether or not the licensee has qualified the Thermo-Lag 330-1 fire barriers by conducting fire endurance tests in accordance with the NRC's requirements and guidance or licensing commitments.

**CECo has not conducted fire endurance tests to qualify the Thermo-Lag 330-1 fire barriers used at LaSalle Station.**

- (b) State
  - (1) whether or not the fire barrier configurations installed in the plant represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations;

**The fire barrier configurations installed at LaSalle Station generally represent the materials, workmanship, methods of assembly, dimensions, and configurations of the qualification test assembly configurations. However, some potential deviations from tested configurations have been identified.**

- (2) whether or not the licensee has evaluated any deviations from the tested configurations.

**Potential deviations from tested configurations have not been evaluated.**

**ATTACHMENT 4**

**LASALLE COUNTY STATION RESPONSE TO GENERIC LETTER 92-08**

(c) State

- (1) whether or not the as-built Thermo-Lag 330-1 barrier configurations are consistent with the barrier configurations used during the ampacity derating tests relied upon by the licensee for the ampacity derating factors used for all raceways protected by Thermo-Lag 330-1 (for fire protection of safe shutdown capability or to achieve physical independence of electrical systems.

**The cable ampacity derating calculations for LaSalle Station were based on as-built Thermo-Lag configurations.**

- (2) whether or not the ampacity derating test results relied upon by the licensee are correct and applicable to the plant design.

**The cable ampacity derating calculations and methodology for the Thermo-Lag 330-1 fire barrier systems used at LaSalle Station have been prepared but have not been reviewed and approved by CECO. This is because CECO is considering the option to replace all Thermo-Lag 330-1 barrier material at LaSalle with an acceptable, alternative material.**

3. With respect to any answer to items 2(a), 2(b), or 2(c) above in the negative,

- (a) describe all corrective actions needed and include a schedule by which such actions shall be completed.

**In regard to items 2(a) and 2(b), CECO is an active participant in the NUMARC program to address the testing of Thermo-Lag 330-1 Fire Barriers. It is expected that the test results from this program will be provided directly to the NRC. After these industry tests have been approved by the NRC, CECO will apply the results of this industry program as well as the results of any self-initiated activities to assure that the barrier configurations at LaSalle Station meet the Fire Protection Program requirements. CECO will provide a schedule of corrective actions after NRC review of the industry program is completed. These actions are consistent with those**

**ATTACHMENT 4**  
**LASALLE COUNTY STATION RESPONSE TO GENERIC LETTER 92-08**  
**(Continued)**

described in References (1) and (2) and accepted by the NRC in References (3) and (5). Also, since LaSalle has only a small amount of subject material, CECO is considering the option to replace all Thermo-Lag 330-1 barrier material at LaSalle. However this option would only be practical if the NRC confirms that alternative fire barrier materials are acceptable.

- (b) describe all compensatory measures taken in accordance with the technical specifications or administrative controls. When corrective actions have been completed, confirm in writing their completion.

LaSalle Station has, as discussed in Reference (1), initiated compensatory actions in the form of fire watches for inoperable fire barriers. These actions are consistent with station technical specifications and administrative technical requirements. When corrective actions are completed for LaSalle Station, written confirmation will be provided to the NRC. These actions are consistent with those described in References (1) and (2) and accepted by the NRC in References (3) and (5).

List all Thermo-Lag 330-1 barriers for which answers to item 2 cannot be provided in the response due within 120 days from the date of this generic letter, and include a schedule by which such answers shall be provided.

A list of all Thermo-Lag barriers at LaSalle Station was provided in References (1) and (2). The qualification of these barriers will be established after the acceptance, by the NRC, of the industry test program. As stated above, if acceptable alternative materials are available, CECO may elect to replace the Thermo-Lag material at LaSalle.