IES
UTILITIES INC.

John F. Franz, Jr.
Vice President, Nuclear

December 1, 1994
NG-94-4452

Mr. William T. Russell
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Response to the NRC Follow-up Request for Additional Information Regarding Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers"

References:
1) NRC Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers," dated December 17, 1992
2) Letter, Callan (NRC) to Liu (IELP) Request for Additional Information Regarding Generic Letter 92-08, dated December 21, 1993
3) Letter, Franz (IES) to Callan (NRC), NG-94-0563, dated February 14, 1994
4) Letter, Zimmerman (NRC) to Liu (IES), Follow-up to the Request for Additional Information Regarding Generic Letter 92-08, dated September 19, 1994
5) Letter, Franz (IES) to Russell (NRC), NG-94-4314, dated November 22, 1994

File: 101a, P-72a

Dear Mr. Russell:

This letter provides IES Utilities plans for resolution of the Thermo-Lag 330-1 issue, which was originally communicated in Reference 1. Subsequent to Generic Letter 92-08 (Ref. 1), the referenced communications have resulted in refinements to our plans for resolution of this issue. This letter responds to Reference 4 as well as providing the information committed to in Reference 3.

Separate from the Thermo-Lag resolution effort, we are performing a reevaluation of the Duane Arnold Energy Center (DAEC) safe shutdown analysis under the Appendix R Rebaseline Project. This project is utilizing an equipment-based approach which credits system interactions not

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previously considered and new fire area boundary definitions. The evaluation methodology being used allows for manual actions and repair options not previously considered. Preliminary results support elimination of the need to protect certain components currently protected by Thermo-La[illegible]le maintaining compliance to 10 CFR 50, Appendix R.

The Attachments to this letter provide the information requested in Reference 4 and describe detailed plans and schedules for resolution of each installation of Thermo-Lag at the DAEC.

Attachment 1 provides our response to your Follow-up Request [illegible] Additional Information (Reference 4) in a format which follows the same numbering scheme as that request. Attachment 2 describes the primary and secondary resolution plans for each Thermo-Lag raceway installation. Attachment 3 describes the primary and secondary resolution plans for each Thermo-Lag fire proofing and structural steel installation. Attachment 4 describes the primary and secondary resolution plans for each of the miscellaneous [illegible]tions of Thermo-Lag. Attachment 5 is a summary of the schedule for completing actio[illegible] necessary to resolve Thermo-Lag concerns at the DAEC.

New and revised commitments are made in this letter and its attachments. These commitments and the associated completion dates are summarized in Attachment 5 and supersede those communicated in Reference 3.

Should you require any further information regarding this matter, please contact this office.

This letter is true and accurate to the best of my knowledge and belief.

IES UTILITIES INC.

By _____
John F. Franz
Vice President, Nuclear

State of Iowa
(County) of Linn

Signed and sworn to before me on this 12th day of May, 1994,

by John F. Franz.

DONNA M. BIRKICHT

_____
Donna M. Birkicht
Notary Public in and for the State of Iowa

May 24, 1996
Commission Expires

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Attachments: 1) IES Utilities' Response to NRC Follow-Up Request for Additional Information Regarding Generic Letter 92-08
2) Thermo-Lag Raceway Fire Barrier Resolution Plans
3) Thermo-Lag Fireproofing and Steel Coating Fire Barrier Resolution Plans
4) Thermo-Lag Miscellaneous Installation Resolution Plans
5) Integrated Thermo-Lag Resolution Schedule

cc: S. Catron
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IES Utilities' Response to NRC Follow-Up Request for Additional Information Regarding Generic Letter 92-08

A. GENERAL RESOLUTION STRATEGY

In response to the previous NRC staff request for additional information (Ref. 2) regarding Thermo-Lag 330-1 Fire Barriers, IES provided (Ref. 3) significant information on Thermo-Lag installations at the DAEC and a general resolution program which was predicated upon the assumption of NRC acceptance of the NEI Application Guide.

The DAEC actively followed the development of the NEI Application Guide, which contains a sound technical approach for applying existing test results to plant specific installations by understanding the potential failure modes. Although the NRC has maintained a continuous dialog with NEI, it does not appear that a successful resolution of the Thermo-Lag concern at DAEC will be easily achieved utilizing that document.

IES has therefore refined its previously stated strategy for Thermo-Lag resolution at the DAEC. This revised strategy is focused on eliminating the reliance on Thermo-Lag 330-1 barriers for compliance to 10 CFR 50.48 and 10 CFR 50, Appendix R for the relatively small amount of Thermo-Lag fire barriers installed at the DAEC.

B. PRIMARY RESOLUTION OPTIONS

In order to eliminate reliance on Thermo-Lag material, the remaining resolution options from IES' previous response were considered for each installation. These options include:

1. **Re-evaluate the Appendix R Safe Shutdown Analysis** for Thermo-Lag protected components to determine if the need for the barrier can be eliminated. This resolution option may require the installation of acceptable fire barriers to protect currently unprotected components or the evaluation of new fire area boundaries.

2. **Relocate or replace protected components.** This includes but is not limited to cable reroutes or circuit modifications.

3. **Replace Thermo-Lag barriers** with other acceptable fire barrier materials or systems. Additional information on replacement raceway fire barrier materials/systems being pursued for use at the DAEC is provided in Section E of this attachment.

4. In the case of structural steel fireproofing, re-evaluate the fire hazard analysis to **eliminate the need to provide fire protection.**

IES Utilities' Response to NRC Follow-Up Request for Additional Information Regarding Generic Letter 92-08

C. SPECIFIC THERMO-LAG INSTALLATION RESOLUTION PLANS

This letter provides the DAEC resolution plans for all Thermo-Lag installations which support the DAEC compliance to 10 CFR 50.48 and 10 CFR 50 Appendix R. These installations were identified in our previous response (Ref. 3). IES plans to eliminate reliance on Thermo-Lag material for all raceway and miscellaneous installations and all but two of the structural steel installations.

1. RACEWAY FIRE BARRIER RESOLUTION PLANS

Attachment 2 contains a listing of each Thermo-Lag Raceway Fire Barrier installed at the DAEC along with the primary resolution plan consistent with the above options. These resolution plans are contingent on completion of analysis activities or alternate fire barrier material testing which support each installation.

2. STRUCTURAL STEEL FIREPROOFING/BARRIER RESOLUTION PLANS

Attachment 3 contains a listing of each Thermo-Lag structural steel fireproofing/barrier installation at the DAEC along with the primary resolution plan. All but two of the resolution plans are consistent with the above options. The resolution plan for the 1 hour local structural steel fireproofing is to conduct representative fire testing with the intent to qualify these installations. Information pertaining to this test program has previously been transmitted to the NRC (Ref. 5). The resolution plan for the Thermo-Lag fire wall is to evaluate the installation against the fire area hazards.

3. MISCELLANEOUS FIRE BARRIER RESOLUTION PLANS

Attachment 4 contains a listing of each Thermo-Lag miscellaneous fire barrier installed at the DAEC along with the primary resolution plan consistent with the above options. It should be noted that these resolution options represent a change to our resolution plan contained in our previous response (Ref. 3). This change is due to the expected barrier reduction resulting from our Appendix R Rebaseline Project. Replacement of some existing miscellaneous installations may not be required.

D. SECONDARY RESOLUTION PLANS

In the event analysis and/or material testing will not support the specific installation resolution or costs associated with these options become excessive, a secondary resolution

plan is also identified in Attachments 2, 3 and 4 for each installation. For some of the installations, the secondary resolution plans do include reliance on Thermo-Lag material. For these installations, Thermo-Lag configurations will be evaluated consistent with NEI guidelines and other industry guidelines, such as the EPRI Tailored Collaboration Project, "Methods for Evaluation of Cable Wrap Fire Barrier Performance." If required, requests for exemption from 10 CFR 50 Appendix R will be prepared and submitted in accordance with the NRC guidance provided in Reference 4.

E. NRC REQUIRED INFORMATION

This section describes IES' response to the NRC's most recent request for additional information (Ref. 4). As a result of the previously stated revision to the DAEC resolution strategy, this response supersedes previous responses.

II. IMPORTANT BARRIER PARAMETERS

The NRC requested specific information on Thermo-Lag fire barrier parameters which the NRC considered important to evaluate the acceptability of such installations. IES provided a significant level of information on each of these parameters in our previous response (Ref. 3) and outlined the approach to be used to obtain additional information and verify the data to support evaluation of installed Thermo-Lag barriers. The DAEC has continued to collect that information for each Thermo-Lag installation, consistent with this list of parameters. However, because of the change to IES' resolution strategy (elimination of reliance on Thermo-Lag material, except for 1 hour structural steel fireproofing and the 3 hour firewall installations) further investigation of our existing installations will not be pursued unless the secondary resolution plan becomes necessary. No additional information pertaining to the existing Thermo-Lag installations is provided with this response. IES will notify NRC of any resolution plans which will rely on existing Thermo-Lag barriers.

As stated in IES' previous response (Ref. 3), the design basis for spray on/preformed board Thermo-Lag steel coating was derived from qualification testing which is different from that which is currently in question. IES has further investigated the supporting test documentation for these installations and concluded that further fire testing is required for their qualification. IES has decided to only pursue validation testing of the 1 hour structural steel fireproofing applications. This material was installed under strict quality assurance requirements and inspection documentation exists which supports compliance with the design requirements.

IES Utilities' Response to NRC Follow-Up Request for Additional Information Regarding Generic Letter 92-08

Important barrier parameters necessary to support evaluation of the Thermo-Lag wall installation will be determined and verified through review of the documentation of the original installation and through field inspection.

III. THERMO-LAG FIRE BARRIERS OUTSIDE THE SCOPE OF THE NUMARC PROGRAM

The current DAEC Thermo-Lag resolution strategy defines resolution plans for each installation independent of the NEI Test Program and the resultant Application Guide. Attachments 2, 3 and 4 provide the resolution plan for each installation.

IV. AMPACITY DERATING

In the latest request for additional information (Ref. 4), the NRC states that there are unresolved issues regarding ampacity derating and that this issue can be resolved independently of the fire endurance issues. IES intends to evaluate the ampacity derating requirements of alternate materials consistent with the approach previously used at the DAEC as described in Reference 3.

V. ALTERNATIVES

IES previously identified several inputs required in order to determine the most practical resolution of Thermo-Lag installations. Many of these inputs are now available and were considered in the revised resolution strategy. As previously stated, IES is pursuing the installation of alternate fire barrier systems which have been successfully fire tested in accordance with ASTM E-119 and the supplemental criteria contained in NRC Generic Letter 86-10, Supplement 1. Some of these barrier materials include DARMATT Barrier Systems supplied by Darchem Engineering of England, Pyrosafe Fire Wrap supplied by TRANSCO Product Inc. and Thermo-Lag 770 Wrap supplied by Thermal Science Inc.

The DARMATT Barrier Systems have been successfully tested in various configurations at the Favordale Technology Centre in England for Darchem Engineering. DAEC personnel witnessed recent successful fire tests of DARMATT 1 and 3 hour Barrier System at the Favordale Technology Centre. However, testing completed to date is not expected to bound the required DAEC configurations.

IES Utilities' Response to NRC Follow-Up Request for Additional Information Regarding Generic Letter 92-08

Although Pyrosafe and Thermo-Lag 770 wrap have not been tested as stand alone barrier systems, this testing is planned for the near future and may produce additional options.

IES plans to be involved with joint utility testing of these materials to produce an acceptable basis for installation at the DAEC.

VI. SCHEDULES

IES has refined its strategy for resolution of Thermo-Lag installations at the DAEC. An integrated resolution schedule is contained in Attachment 5. This schedule further refines and supersedes the resolution schedule provided in response to the previous Request for Additional Information (Ref. 3).

This revised strategy will allow resolution of concerns with Thermo-Lag installations at the DAEC in a time frame consistent with the schedule to which IES has previously committed. As stated in Reference 3, IES plans to complete all actions necessary to resolve the concerns with Thermo-Lag by December 31, 1996.

Thermo-Lag Raceway Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
1A-1	3 Hour Conduit/Junction Box Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.
1C-1	3 Hour Conduit/Junction Box Barrier 1. Eliminate the need to protect components by: a. Revising Safe Shutdown Analysis to credit redundant equipment. 2. No Secondary Resolution required.
1C-2	3 Hour Cable Tray/Conduit Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.
1C-3	3 Hour Cable Tray/Conduit Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.
2A-1	3 Hour Cable Tray/Conduit Barrier 1. Eliminate need to protect components by: a. Rerouting required cables outside of fire area. b. Revising Safe Shutdown Analysis to provide basis for not protecting remaining cables. 2. No Secondary Resolution required.

Thermo-Lag Raceway Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
2A-2	3 Hour Cable Tray/Conduit Barrier 1. Eliminate need to protect components by: a. Rerouting required cables outside of fire area. b. Revising Safe Shutdown Analysis to provide basis for not protecting remaining cables. 2. No Secondary Resolution required.
2A-3	3 Hour Cable Tray/Conduit Barrier 1. Eliminate need to protect components by: a. Rerouting required cables outside of fire area. b. Revising Safe Shutdown Analysis to provide basis for not protecting remaining cables. 2. No Secondary Resolution required.
2A-4	3 Hour Conduit Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.
2A-5	3 Hour Conduit Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations. b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.
2A-6	3 Hour Cable Tray Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.

Thermo-Lag Raceway Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
2A-7	3 Hour Cable Tray Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.
2A-8	3 Hour Junction Box/Conduit Barrier 1. Eliminate need to protect components by: a. Revising Safe Shutdown Analysis to provide basis for not protecting remaining cables. 2. Reroute cables outside of the fire area.
2A-9	3 Hour Conduit Barrier 1. Eliminate need to protect components by: a. Revising Safe Shutdown Analysis to provide basis for not protecting remaining cables. 2. Replace Thermo-Lag with Alternate Barrier
2A-10	3 Hour Conduit/Cable Tray/Junction Box Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.
2D-1	3 Hour Cable Tray/Conduit Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations. b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.
2D-2	3 Hour Conduit Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations. b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.

Thermo-Lag Raceway Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
2D-3	3 Hour Conduit Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations. b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.
2D-4	3 Hour Conduit Barrier 1. Eliminate the need to protect components by: a. Modifying circuits to address spurious operations. b. Revising Safe Shutdown Analysis to credit manual operation of required equipment. 2. No Secondary Resolution required.
3A-1	3 Hour Cable Tray/Conduit Barrier 1. Eliminate the need to protect components by: a. Revising Safe Shutdown Analysis to credit redundant system. (This may require cable rerouting to eliminate spurious operation concerns.) 2. Replace Thermo-Lag with Alternate Barrier.
3A-2	3 Hour Conduit/Valve Enclosure Barrier 1. Eliminate the need to protect components by: a. Revising Safe Shutdown Analysis to credit redundant system. (This may require cable rerouting to eliminate spurious operation concerns). 2. Replace Thermo-Lag with Alternate Barrier.
7E-1	1 Hour Junction Box/Conduit Barrier 1. Eliminate the need to protect components by: a. Protecting redundant components in the fire area with alternate barrier and revising Safe Shutdown Analysis. b. Reviewing basis for existing Exemption. 2. Replace Thermo-Lag with Alternate Barrier.

Thermo-Lag Raceway Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
7E-2	1 Hour Junction Box/Conduit Barrier 1. Eliminate the need to protect components by: a. Protecting redundant components in the fire area with alternate barrier and revising Safe Shutdown Analysis. b. Reviewing basis for existing Exemption. 2. Replace Thermo-Lag with Alternate Barrier.
16F-1	3 Hour Cable Tray/Conduit Barrier 1. Replace Thermo-Lag with Alternate Barrier. 2. Downgrade existing installation to 1 Hour and request exemption from suppression based on combustible loading/fire hazards.

Thermo-Lag Fireproofing and Steel Coating Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
SS-1	3 Hour Thermo-Lag Board Fireproofing (Fire Zone 10C) 1. Replace with Alternate Material. 2. No Secondary Resolution required.
SS-2	3 Hour Thermo-Lag Board Fireproofing (Fire Zone 10E) 1. Replace with Alternate Material. 2. No Secondary Resolution required.
SS-3	3 Hour Thermo-Lag Board Fireproofing (Fire Zone 10F) 1. Replace with Alternate Material. 2. No Secondary Resolution required.
SS-4	3 Hour Thermo-Lag Spray Fireproofing (Fire Zone 7A) 1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. 2. No Secondary Resolution required.
SS-5	3 Hour Thermo-Lag Board Fireproofing (Fire Zone 7B) 1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. 2. No Secondary Resolution required.
SS-6	3 Hour Thermo-Lag Spray Fireproofing (Fire Zone 7C) 1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. 2. No Secondary Resolution required.
SS-7	1 Hour Thermo-Lag Spray/Board Local Fireproofing (Fire Zones 2A, 2B, 3A, 3B, 7E) 1. Validate design basis through Fire Testing. 2. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to determine more realistic steel heat-up rates.

Thermo-Lag Fireproofing and Steel Coating Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
SS-8	3 Hour Thermo-Lag Board Fire Wall (Fire Zone 16A) 1. Evaluate installed configuration against the fire area hazards to determine acceptability as a fire area boundary. 2. Replace with Alternate Material.
SS-9	3 Hour Thermo-Lag Spray Duct Coating (Fire Zone 1C) 1. Replace with Alternate Material. 2. Eliminate need to protect by: a. Revising Safe Shutdown Analysis to rely on redundant train. (This will require installation of acceptable 3 Hour raceway barriers on previously unprotected components.)
FD-013 (Fire Zone 2B)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-115 (Fire Zone 2B)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-016 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.

Thermo-Lag Fireproofing and Steel Coating Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
FD-015 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-114 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-116 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-010 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-012 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.

Thermo-Lag Fireproofing and Steel Coating Fire Barrier Resolution Plans

Installation	Description/Primary Resolution/Secondary Resolution
FD-014 (Fire Zone 1A)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-302 (Fire Zone 12B)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.
FD-038 (Fire Zone 12B)	3 Hour Fireproofing on Fire Damper Retaining Steel 1. Eliminate need to protect steel by: a. Removing from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation. b. Revising fire modeling to produce more realistic steel heat-up rates. 2. Replace with Alternate Material.

Thermo-Lag Miscellaneous Installation Fire Barrier Resolution Plans

MISC-1 Penetration Seal 2A-S5-2 (Fire Zone 2A)

1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation.
2. Replace with Alternate Material.

MISC-2 Penetration Seal 2A-E3-2/3 (Fire Zone 2A)

1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation.
2. Replace with Alternate Material.

MISC-3 Penetration Seal 2B-N4-6 (Fire Zone 2B)

1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation.
2. Replace with Alternate Material.

MISC-4 Penetration Seal 2B-S-22 (Fire Zone 2B)

1. Replace with Alternate Material - **COMPLETE.**

MISC-5 Penetration Seal 8A-W (Fire Zone 8A)

1. Remove from scope of Appendix R by revising Safe Shutdown Analysis with fire area consolidation.
2. Replace with Alternate Material.

MISC-6 Door Jam (Fire Zone 8A)

1. Replace with Alternate Material - **COMPLETE.**

MISC-7 Door Jam (Fire Zone 7A)

1. Replace with Alternate Material - **COMPLETE.**

Integrated Thermo-Lag Resolution Schedule

1. Complete initial fire endurance testing in support of validating the qualification of 1 hour Thermo-Lag fireproofing of structural steel and determine any additional actions required to resolve these installations by March 1, 1995.

   Related Installations: SS-7

2. Define initial scope of alternate barrier testing in support of new barrier installations and submit test scope and schedule to NRC by March 1, 1995

   Related Installations: 7E-1, 7E-2

3. Complete initial plant modifications and supporting evaluations to resolve Thermo-Lag installations by July 1, 1995.

   Related Installations: 1A-1, 2A-1, 2A-2, 2A-3, 2A-5, 2A-8, 2A-9, 2D-1, 2D-2, 2D-3, 2D-4

4. Complete replacement of 3 hour Thermo-Lag board fireproofing with alternate material by July 1, 1995.

   Related Installations: SS-1, SS-2, SS-3

5. Complete required Safe Shutdown Analysis evaluations to support specific resolution plans by July 1, 1995. These activities will be coordinated under the Appendix R Rebaseline Project currently in progress. The scope of plant modifications required to support eliminating the need for protecting components will be defined and submitted to NRC by July 1, 1995 along with schedules for implementation.

   Related Installations: 1C-1, 3A-1, 3A-2, SS-4, SS-5, SS-6, FD-115, FD-015, FD-014, FD-302, FD-038, MISC-1, MISC-2, MISC-3, MISC-5

6. Evaluate the Thermo-Lag fire wall against the area fire hazards for acceptability as a fire area boundary and determine if any additional actions are required by July 1, 1995.

   Related Installations: SS-8

Integrated Thermo-Lag Resolution Schedule

7. Define scope of alternate barrier testing required to support Thermo-Lag raceway barrier replacement for remaining installations and submit test scope and schedule to NRC by September 1, 1995

   Related Installations: 1C-2, 1C-3, 2A-4, 2A-6, 2A-7, 2A-10, 16F-1

8. Replace 3 hour duct coating with alternate material by September 1, 1995.

   Related Installations: SS-9

9. Complete fire modeling evaluations to determine the need to protect currently protected fire dampers not removed from the scope of Appendix R by December 1, 1995.

   Related Installations: FD-013, FD-016, FD-114, FD-116, FD-010, FD-012

10. Complete plant modifications and fire barrier installation/replacement to fully resolve DAEC Thermo-Lag concerns by December 31, 1996.

Related Installations: All