

Central Files



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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May 30, 1997

MEMORANDUM TO: Chairman Jackson
Commissioner Rogers
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan

FROM: L. Joseph Callan *Callan*
Executive Director for Operations

SUBJECT: SEMIANNUAL STATUS REPORT ON THE FIRE PROTECTION TASK ACTION
PLAN AND PLANT-SPECIFIC THERMO-LAG CORRECTIVE ACTION PROGRAMS

The fourth semiannual report on the status of the Fire Protection Task Action Plan (FP-TAP) is attached (Attachment 1). Since the previous status report (memorandum of October 31, 1996, from James M. Taylor, Executive Director for Operations, to the Commission), the staff has worked on the risk-informed, performance-based fire protection rulemaking; the fire protection functional inspection program; and the self-induced station blackout study.

As reported in the previous status report, the staff has completed the Thermo-Lag Action Plan, but continues to monitor plant-specific Thermo-Lag corrective action plans and schedules. The licensees for 44 units have informed the staff that all corrective actions are complete. The licensees for 16 units have committed to completion dates in 1997. The completion dates for the remaining units are: 1998 (9 units), 1999 (9 units), and 2000 (4 units). See Attachment 2 for a summary of the plant-specific completion schedules and Attachment 3 for the detailed status of plant-specific corrective actions.

Since the previous status report, the staff has met with the licensees with completion schedules that extend beyond 1997. The staff will meet with the licensee for Crystal River 3 during May 1997. During the meetings, the staff requested additional information from the licensees for Limerick 1/2; Peach Bottom 2/3; Oyster Creek; Sequoyah 1/2; Susquehanna 1/2; Turkey Point 3/4; and Washington Nuclear Project 2. The staff will have followup meetings with the licensees for Limerick, Peach Bottom, Sequoyah, and Turkey Point. For the remaining plants, on the basis of information submitted by the licensees and provided during the meetings, the staff has concluded that the schedules are reasonable. For those commitments that extend beyond 1997, the staff is considering issuing confirmatory orders to ensure schedules are met. After the staff completes the meetings and considers the additional information it requested, it will provide a paper to the Commission with its conclusions and its plans for ensuring that the licensees continue to make progress towards overall resolution of the Thermo-Lag issue and meet their schedular commitments.

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In July 1996, the staff issued NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," which documented its technical assessment of penetration seals. As a result of recent Congressional inquiries, the staff has initiated an assessment of seal problems reported since it performed the assessment discussed in the NUREG report. The staff will use the insights from this effort to determine if additional NRC or industry actions on fire barrier penetration seals is needed. This effort is not a part of the FP-TAP but is being tracked by the staff in a separate mini action plan. It should be noted that an assessment of penetration seals is part of the recently developed Fire Protection Functional Inspection procedure.

Attachments: As stated (3)

cc: SECY
OPA
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SEMIANNUAL STATUS REPORT ON
THE FIRE PROTECTION TASK ACTION PLAN
OFFICE OF NUCLEAR REACTOR REGULATION
FIRE PROTECTION ENGINEERING SECTION

1 INTRODUCTION

During July 1992, the U.S. Nuclear Regulatory Commission (NRC) staff developed the Thermo-Lag Action Plan to address generic issues related to the use by nuclear reactor licensees of Thermo-Lag 330-1 fire barriers. Later, the staff reassessed the NRC reactor fire protection program in response to programmatic concerns it raised during its review of Thermo-Lag fire barriers. The staff presented its findings in "Report on the Reassessment of the NRC Fire Protection Program," February 27, 1993. The Fire Protection Task Action Plan (FP-TAP) addresses implementation of the recommendations made in the reassessment report. The FP-TAP tracks the implementation of a wide range of technical and programmatic fire protection issues. It includes recommendations for action (Part I), recommendations for further study (Part II), confirmation issues (Part III), and lessons learned (Part IV).

The status of each part of the FP-TAP, along with important accomplishments, is presented in Section 2 of this fourth semiannual report. The previous status report was attached to a memorandum of October 31, 1996, from James M. Taylor, Executive Director for Operations, to the Commission. In the future, the staff will issue status reports annually.

Each operating reactor has an NRC-approved fire protection plan that conforms to 10 CFR 50.48, "Fire protection," and General Design Criterion 3, "Fire protection," and satisfies the defense-in-depth concept. Licensees have also implemented Generic Letter 86-10 (i.e., incorporated the NRC-approved fire protection plan into the updated safety analysis report, removed certain aspects of the fire protection plan from technical specifications, and adopted a standard fire protection license condition). When fire protection features are degraded or inoperable, the licensees implement NRC-approved measures, such as fire watches, to compensate for the condition. This combination of a defense-in-depth fire protection plan and compensatory measures ensures that an adequate level of fire protection is maintained at each operating reactor while the staff is completing the FP-TAP.

2 STATUS

2.1 Recommendations for Action

2.1.1 Revision of the Fire Protection Regulation (Complete)

As reported in the status report of October 31, 1996, the staff is now tracking its work on the performance-based, risk-informed fire protection rule in the rulemaking action plan.

2.1.2 Fire Barrier Systems Other Than Thermo-Lag (Ongoing)

As reported in the status report of October 31, 1996, the staff has completed its small-scale fire barrier scoping tests at the National Institute of Standards and Technology (reference "Report of Test FR 4008"). Hindered by competing priorities, the staff did not complete its review of the test results during the reporting period. However, the staff plans to complete this effort before the next status report.

2.1.3 Coordination of Fire Protection Inspections (Complete)

In a memorandum to the Commission (September 20, 1995), the staff informed the Commission that it would develop and implement the fire protection functional inspection (FPFI) program as outlined in SECY-95-034, "Status of Recommendations Resulting From the Reassessment of the NRC Fire Protection Program" (February 13, 1995), to address the reassessment recommendation that the staff reevaluate the scope of the reactor fire protection inspection program and develop a coordinated approach for the fire protection and safe-shutdown systems inspections. In the status report of October 31, 1996, the staff stated that it would give the Commission the details of the FPFI program and staff plans for implementing it. In SECY-96-267, "Fire Protection Functional Inspection Program" (December 24, 1996), the staff satisfied this commitment. Later, in a Staff Requirements Memorandum (SRM) of February 7, 1997, the Commission approved the staff's plans and directed the staff to proceed with the four pilot inspections.

River Bend will be inspected in June 1997, Clinton in August 1997, Susquehanna in October 1997, and St. Lucie in March 1998. The staff is currently completing the FPFI procedures and guidelines. The procedure will be issued as a Temporary Instruction (TI) in early June, preceding the River Bend FPFI.

In accordance with SECY-96-267 and the SRM of February 7, 1997, the staff will give the Commission the FPFI procedures for information preceding the River Bend FPFI and will also give the Commission a post-pilot inspection program report describing inspection results and discussing ways to expand the benefits of the pilot inspections to all licensees (e.g., licensee self-assessments).

2.1.4 Self-Induced Station Blackout Study (Ongoing)

The staff, with the technical assistance of Brookhaven National Laboratory (BNL), has developed a probabilistic risk assessment (PRA) model for assessing the risk associated with post-fire safe-shutdown methodologies that impose a self-induced station blackout. As reported in the status report of October 31, 1996, the staff presented the draft station blackout study to the Advisory Committee on Reactor Safeguards (ACRS) on February 29, 1996. Since that status report, the staff has considered the recommendations made by the ACRS and has submitted a revised scope of work to BNL addressing the ACRS recommendations. After the staff modifies its contract with BNL, it plans to apply the PRA model to two plant-specific cases.

2.2 Recommendations for Further Study (Complete)

As reported in the status report of October 31, 1996, Part II of the FP-TAP is complete.

2.3 Confirmation Issues (Complete)

Part III of the reassessment report recommended that the staff perform a programmatic assessment of the fire protection review and inspection programs. The FPI program (see Section 2.1.3 above) addresses this recommendation. As reported in the status report of October 31, 1996, the remaining Part III issues are now being tracked in the fire protection rulemaking action plan. Therefore, Part III of the FP-TAP is complete.

2.4 Lessons Learned (Complete)

As reported in previous status reports, Part IV of the FP-TAP is complete.

**THERMO-LAG CORRECTIVE ACTION COMPLETION SCHEDULES
AS OF MAY 5, 1997**

COMPLETE*	COMPLETE* 1996/1997	1997	1998	1999	2000	N/A
ANO2	Braidwood 1/2	Beaver Valley 2	Clinton	Limerick 1/2	Crystal River 3	San Onofre 1
Beaver Valley 1	Byron 1/2	Brunswick 1/2	Comanche Peak 1	Peach Bottom 2/3	Sequoyah 1/2	Trojan
Browns Ferry 1/2/3	Callaway	Duane Arnold	Davis Besse	Susquehanna 2	Susquehanna 1	Watts Bar 2
Comanche Peak 2	Cook 1/2	Indian Point 2	Hatch 1/2	TMI-1		Yankee Rowe
Cooper	Grand Gulf 1	Millstone 1/2	Oyster Creek	Turkey Point 3/4		
Diablo Canyon 1/2	McGuire 1/2	Palo Verde 2/3	Palo Verde 1	WNP2		
Fermi 2	Palisades	Perry 1	St Lucie 1/2			
Haddam Neck	Vogtle 2	Prairie Island 1/2				
LaSalle 1/2	Wolf Creek 1	River Bend 1				
Maine Yankee		Shearon Harris 1				
Millstone 3		Summer				
Monticello		Vogtle 1				
Nine Mile 1/2						
North Anna 1/2						
San Onofre 2/3						
South Texas 1/2						
Surry 1/2						
Vermont Yankee						
Waterford 3						
Watts Bar 1						
Zion 1/2						
31 units	13 units	16 units	9 units	9 units	4 units	4 units

* As reported by licensees in accordance with Generic Letter 92-08.

Attachment 2

**STATUS OF GENERIC LETTER 92-08
"THERMO-LAG 330-1 FIRE BARRIERS"
AS OF MAY 5, 1997**

PLANT	CORRECTIVE ACTION PLANS/STATUS	LICENSING ACTION COMPLETE ¹	LICENSEE SCHEDULED COMPLETION ²	LICENSEE IMPLEM. DATE ³
Arkansas Nuclear One 2	In a letter of 02/17/94, the licensee stated that it had reassessed the safe shutdown analysis for Thermo-Lag fire barriers in the intake structure and concluded that the barriers were not required. The licensee also stated that the use of Thermo-Lag is no longer included in the fire protection program and that the issues raised in BUL 92-01, BUL 92-01, Supplement 1, and GL 92-08 were resolved. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	06/21/94	COMPLETE	02/17/94
Beaver Valley 1	In a letter of 04/16/93, the licensee stated that engineering evaluations had been developed to qualify the Thermo-Lag barriers in the cable mezzanine area. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	09/23/94	COMPLETE	04/16/93
Beaver Valley 2	FIRE: In a letter of 12/22/94 the licensee stated that it planned to revise the safe shutdown analysis, replace barriers, modify circuits, and perform engineering evaluations. In letters of 03/23/95 and 12/01/95, the licensee confirmed that, in spite of some delays in the industry test program, it would meet its completion date of 12/31/96. In a letter of 12/27/96, the licensee informed the staff it could not meet its proposed completion date due, in part, to additional work generated by a conservative reassessment of its corrective actions. In a letter dated 02/14/97, the licensee stated that it would complete hardware modifications by 08/29/97 and confirm completion of corrective actions in writing.		08/97	
	AMPACITY: Staff/SNL review ongoing.		09/97	
Braidwood 1/2	FIRE: In letters of 02/10/94 and 12/16/94, the licensee stated that it would revise the safe shutdown analysis, replace Thermo-Lag barriers with Darmatt barriers, downgrade certain 3 hour barriers to 1 hour barriers and request exemptions. Later, in a letter of 03/21/96, the licensee stated that cable rerouting was the preferred option, Darmatt would not be used, Thermo-Lag barriers would be abandoned in place, and all corrective actions would be completed on schedule. In a letter dated 01/17/97, the licensee confirmed that the actions to address Thermo-Lag 330-1 fire barriers had been completed. With regard to ampacity derating, the licensee developed an analytical model to assess the ampacity derating factor for installed fire barriers. The staff/Sandia National Laboratories (SNL) review is ongoing.		COMPLETE	01/17/97
Browns Ferry 1/2/3	FIRE: The licensee replaced its single application in the intake pumping station with new Thermo-Lag configurations qualified by the Watts Bar test program. The staff accepted this corrective action in a safety evaluation of 10/12/95 for the fire protection program for combined Unit 2 and Unit 3 operation. With regard to ampacity derating, the licensee will use Watts Bar test data.	10/12/95	COMPLETE	10/12/95

¹ Licensing Action Complete: Date of NRC letter accepting licensee's corrective action plan and schedule.

² Licensee Scheduled Completion: Licensee's scheduler commitment for implementing corrective action plan.

³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

PLANT	CORRECTIVE ACTION PLANS/STATUS	LICENSING ACTION COMPLETE ¹	LICENSEE SCHEDULED COMPLETION ²	LICENSEE IMPLEM. DATE ³
Brunswick 1/2	In letters of 02/14/94 and 03/23/95, the licensee stated it planned to revise the safe shutdown analysis, modify circuits, request exemptions, upgrade barriers, replace Thermo-Lag barriers with Darmatt barriers, and perform engineering evaluations. In a letter of 01/10/96, the licensee provided additional details of the corrective actions and confirmed completion by the end of the 1996 refueling outage. An exemption submitted on 08/31/95, was updated on 01/10/96, and revised on 11/21/96. In a letter dated 12/21/96, the licensee stated that it would complete corrective actions 60 days after the staff acts on the exemption request. With regard to ampacity derating, in its closeout letter, the staff will inform the licensee to keep its assessment of potential age-related effects of Thermo-Lag on cables for the time period prior to removal on site for future inspection.		1997	
Byron 1/2	FIRE: In a letter of 09/20/95, the licensee stated that it would replace most Thermo-Lag barriers using three resolution methods: revise the safe shutdown analysis, reroute cables, and replace Thermo-Lag barriers with Darmatt barriers. In a letter of 03/21/96, the licensee stated that rerouting was the option chosen for barriers not yet replaced with Darmatt barriers and that all corrective actions would be completed on schedule. In a letter dated 01/17/97, the licensee confirmed that the actions to address Thermo-Lag 330-1 fire barriers have been completed. With regard to ampacity derating, the licensee stated that original analytical methods used to determine ampacity derating values are conservative with regard to IN 92-22 values. The licensee anticipates that the methodology used for Braidwood is also applicable to Byron. Staff/SNL review is ongoing.		COMPLETE	01/17/97
Callaway	FIRE: The licensees originally planned to use the EPRI tailored Collaboration Fire Modeling Tools Methodology and the FIVE Methodology. In a letter of 05/31/96 the licensee stated that it would revise the safe shutdown analysis, reroute cables, and replace Thermo-Lag barriers with Darmatt barriers. In a letter dated 1/31/97, the licensee confirmed that all corrective actions were completed as of 12/31/96. With regard to ampacity derating, the licensee has used a similarity analysis, based in the TUE test results, to resolve the ampacity issue.	04/11/97	COMPLETE	01/31/97
Clinton	FIRE: In a letter of 02/09/94, the licensee stated that it planned to eliminate the need for 7 Thermo-Lag barriers by engineering evaluations. For the remaining 5 barriers, the corrective actions included revising the safe shutdown analysis, upgrading or replacing the barriers, rerouting cables, and adding detection and suppression systems. After meetings on 05/16/96 and 07/25/96 to discuss staff concerns with the licensee's engineering evaluations, the licensee revised its approach for these barriers. The licensee submitted its new plans by letter of 10/09/96. The staff met with the licensee on 04/21/97 to discuss its proposed completion schedule. On the basis of the information obtained during the meeting, the staff concluded that the completion schedule is acceptable.		12/98	
	AMPACITY: The licensee conducted a 50.59 evaluation. The staff issued a follow-up request for additional information on 10/04/95. Staff/SNL review is ongoing.		COMPLETE	

¹ Licensing Action Complete: Date of NRC letter accepting licensee's corrective action plan and schedule.

² Licensee Scheduled Completion: Licensee's scheduler commitment for implementing corrective action plan.

³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

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Comanche Peak 1	By letter of 03/24/94, the licensee provided its evaluation of installed Thermo-Lag barriers, the results of plant-specific testing, and the program to upgrade barriers. On 05/22/96, the staff issued a safety evaluation that approved upgrades for a number of barrier configurations. It also contained open items for other configurations. In letters dated 10/24/96 and 02/28/97 the licensee responded to open items. In response to staff concerns, the licensee is performing some upgrades to be completed by mid 1998. With regard to ampacity derating, the licensee stated that Unit 1 configurations are identical to Unit 2. Therefore, it used the Unit 2 test results for Unit 1.		06/98	
Comanche Peak 2	The staff approved the fire protection aspects of the Thermo-Lag program in Supplements 26 and 27 of NUREG-0797, "Safety Evaluation Report related to the operation of Comanche Peak Steam Electric Station, Unit 2." The staff approved the ampacity derating aspects of the program in a safety evaluation that it provided to the licensee in a letter of 06/14/95.	02/93	COMPLETE	02/93
Cooper	In a letter of 02/09/94, the licensee stated that it had removed Thermo-Lag from 5 radiant energy heat shields and that there were no Thermo-Lag fire barriers at the plant. Ampacity derating is not applicable.	05/30/95	COMPLETE	02/09/94
Crystal River 3	FIRE: Nuclear Energy Institute (NEI) lead plant. The licensee originally planned to use the EPRI Tailored Collaboration Fire Modeling Tools Methodology. In a letter of 12/21/95, the licensee stated it had selected four options for the resolution of Thermo-Lag: revise safe shutdown analysis, modify circuits, upgrade or replace Thermo-Lag barriers with Mecatiss, and request exemptions. In a letter of 12/21/95, the licensee stated that it expects to complete all corrective actions by 12/31/96, with the exception of the plant modifications scheduled for refueling outage 12 (spring 2000). The licensee submitted an exemption by letter dated 06/21/96. The licensee has completed its Mecatiss fire test program. The staff witnessed the tests and is currently reviewing the test results. In a letter dated 01/29/97, the licensee stated that the completion date was changed from 06/00 to 12/00. A meeting is tentatively scheduled for 05/20/97.		12/00	
	AMPACITY: The licensee conducted ampacity derating tests. Test results were submitted on 07/31/96. Staff/SNL review is ongoing.		COMPLETE	
Davis Besse	FIRE: In a letter of 02/20/96, the licensee stated it had divided the removal and replacement into four phases starting during the third quarter of 1996 with completion during the fourth quarter of 1998 (11th refueling outage). In a letter of 06/26/96, the licensee stated it planned to remove and replace 1-hour barriers, 3-hour barriers and radiant energy shields with 3M Company Interam. The staff met with the licensee on 04/03/97. During the meeting, the licensee stated it might accelerate its schedule and complete corrective actions by the second quarter of 1998. On the basis of the information obtained during the meeting, the staff concluded that the completion schedule is acceptable.		10/98	
	AMPACITY: Staff/SNL review ongoing.		12/98	

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² Licensee Scheduled Completion: Licensee's scheduler commitment for implementing corrective action plan.

³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

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D.C. Cook 1/2	FIRE: In a letter of 12/21/94, the licensee stated it planned to revise the safe shutdown analysis, replace or upgrade barriers, modify circuits, request exemptions, downgrade 3-hour Thermo-lag barriers to 1-hour, and conduct additional fire tests. In a letter of 07/17/96, the licensee stated that it would submit a final report by 12/30/96. By letter dated 12/27/96 the licensee confirmed that all corrective actions were complete. The staff is preparing an RAI in regard to the information contained in this letter. With regard to ampacity derating, the licensee stated that its original ampacity derating program, which did not rely on TSI data, adequately addressed concerns for existing Thermo-Lag installations. Staff/SNL review is ongoing.		COMPLETE	12/27/97
Diablo Canyon 1/2	In a letter of 01/12/95, the licensee stated that, where the safe shutdown analysis indicates that fire barriers are necessary, it replaced the Thermo-Lag barriers with other fire barrier. These modifications were completed by 12/31/94. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal.	04/20/95	COMPLETE	01/12/95
Duane Arnold	FIRE: In letters of 06/30/95 and 12/01/95, the licensee stated that it would maintain 3 Thermo-Lag installations: a raceway fire barrier for which an exemption was submitted on 06/28/96 (See Appendix 2), fire proofing of structural steel, which was qualified by test, and a wall barrier. For the remaining barriers which have not been eliminated by reanalysis, the licensee will replace the Thermo-Lag barriers with Darmatt barriers. By letter dated 10/17/96, the licensee withdrew the exemption and informed the staff that this change of plans would change its completion date from March 1997 to October 1997. In a letter of 12/13/96, the licensee stated it had eliminated reliance on Thermo-Lag for all but one enclosure and that Darmatt KM-1 would be used to protect this application.		10/97	
	AMPACITY: Staff/SNL review is ongoing.		COMPLETE	
Fermi 2	In a letter of 02/11/94, the licensee identified 8 of 11 areas for replacement of Thermo-Lag barriers with approved barriers. The remaining 3 barriers were reclassified as smoke and gas barriers. In a letter of 06/15/96, the licensee confirmed that it had completed all modifications. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	04/18/95	COMPLETE	06/15/96
Grand Gulf 1	FIRE: NEI Lead Plant. In a letter of 12/21/94, the licensee stated that it would ensure that all Thermo-Lag barriers would provide at least a 1 hour fire rating. The licensee also plans to install or take credit for partial suppression in conjunction with the 1 hour ratings, in cases where three hour assemblies were originally installed. In a letter of 06/28/96, the licensee stated that it will confirm completion of all corrective actions by 11/96. In a letter dated 03/03/97, the licensee stated that all fire endurance corrective actions were complete. With regard to ampacity derating, staff/SNL review is ongoing.	04/21/97	COMPLETE	3/3/97

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³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

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Haddam Neck	The licensee resolved the 2 Thermo-Lag applications described in its letter of 02/11/94, as follows: Developed a cold shutdown repair procedure to replace the RHR pump power cable after a fire and abandoned the Thermo-Lag barrier in place (3/31/95 letter) and upgraded the cable vault barrier to 1 hour. In a letter of 10/20/95, the licensee confirmed completion of the corrective actions. The licensee developed an analytical model to assess ampacity derating factor for the installed configuration. Staff/SNL review is ongoing.		COMPLETE	10/20/95
Hatch 1/2	FIRE: In a letter of 12/13/94, the licensee stated it would modify circuits, realign fire areas, revise the safe shutdown analysis, and adjust manual operator actions. In view of the ampacity derating and combustibility concerns, the licensee decided to remove Thermo-Lag rather than abandon the barriers in place (03/28/95 letter). The staff called the licensee on 02/28/97 and on 04/17/97 to discuss its corrective actions and schedule. On the basis of the information obtained during the calls, the staff concluded that the completion schedule is acceptable.	06/29/95	10/98	
	AMPACITY: Licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal.		COMPLETE	
Indian Point 2	In a letter of 12/19/94, the licensee indicated it planned to remove Thermo-Lag except for one application for which it requested an exemption on 03/30/95 (see Appendix 2). By letter of 03/20/97, the licensee withdrew its exemption. Ampacity derating is not applicable because power cables were not enclosed in Thermo-Lag.		06/97	
LaSalle 1/2	By letter of 04/06/94, the licensee informed the staff it intended to replace Thermo-Lag barriers with Darmatt barriers. On 11/20/95, the staff issued a safety evaluation on plant-specific use of Darmatt barriers fire barriers. On 03/29/96, the staff issued a safety evaluation regarding the seismic capabilities of Darmatt barriers. With regard to ampacity derating, the staff/SNL review of the methodology used for Braidwood will be the basis for the closeout. Staff/SNL review is ongoing.	04/23/97	COMPLETE	01/17/97
Limerick 1/2	FIRE: NEI Lead Plant. In a letter of 12/19/94, the licensee stated it planned to revise the safe shutdown analysis, replace or upgrade barriers, add suppression, reroute cables, and request exemptions. The staff met with the licensee on 4/14/97. On the basis of the information obtained during the meeting, the staff could not evaluate the progress made by the licensee. The staff will meet again to discuss the details of the licensee plans and schedules.		04/99	
	AMPACITY: In 05/02/96 response to staff RAI, the licensee stated that the ampacity derating evaluation will be performed in conjunction with the fire endurance qualification evaluation which is scheduled to be completed by 12/31/97. Staff/SNL review is ongoing.		12/97	

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Maine Yankee	In a letter of 05/17/95, the licensee stated that all corrective actions were complete. The licensee rerouted cables, performed reanalysis, changed procedures, and replaced Thermo-Lag with 3-hour rated block walls. The licensee submitted an exemption on 09/27/95 for Thermo-Lag radiant energy heat shield (see Appendix 2). Ampacity derating is not applicable because there are only radiant energy heat shield applications.		COMPLETE	5/17/95
McGuire 1/2	In a letter of 11/28/94, the licensee stated that it planned to modify the standby shutdown system to eliminate Thermo-Lag for one application and replace cables with mineral insulated cables for other application. Ampacity derating is not applicable because power cables were not enclosed in Thermo-Lag. By letter dated 05/29/96, the licensee informed the staff that the modifications were complete.	04/07/95	COMPLETE	05/29/96
Millstone 1/2	FIRE: In a letter of 02/27/96, the licensee stated that it would reanalyze the safe shutdown analysis, upgrade certain Thermo-Lag fire barriers, add suppression and detection, replace certain Thermo-Lag barriers, and implement design changes to meet Appendix R separation criteria. The staff met with the licensee on 04/24/97 to discuss its corrective actions and resolution schedule. The licensee informed the staff that corrective actions at Unit 2 would be complete by 11/97, three years ahead of schedule. The staff plans to meet again with the licensee in late June 1997 to discuss finalized corrective action plans.		12/97 Unit 1 11/97 Unit 2	
	AMPACITY: The licensee developed an analytical model to assess the ampacity derating factor for installed fire barriers. Staff/SNL review is ongoing.		COMPLETE	
Millstone 3	In a letter of 01/03/94, the licensee stated that it had eliminated reliance on Thermo-Lag by replacing certain cables with 1-hour fire-rated cables. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	04/11/95	COMPLETE	01/03/94
Monticello	In a letter of 04/16/93, the licensee stated that all corrective actions were complete. The licensee rerouted cables to achieve the required separation and removed all Thermo-Lag material. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	05/27/93	COMPLETE	04/16/93
Nine Mile Point 1	In a letter of 12/14/94, the licensee stated it planned to replace all Thermo-Lag with another fire barrier material. In a letter of 12/13/95, the licensee informed the staff that it had completed the replacement of Thermo-Lag. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	03/19/95	COMPLETE	12/13/95

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³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

PLANT	CORRECTIVE ACTION PLANS/STATUS	LICENSING ACTION COMPLETE ¹	LICENSEE SCHEDULED COMPLETION ²	LICENSEE IMPLEM. DATE ³
Nine Mile Point 2	In a letter of 12/14/94, the licensee stated it planned to replace all Thermo-Lag with an acceptable fire barrier material except for one application (HVAC ducts). In a letter of 01/30/96 the licensee informed the staff that engineering analysis had further eliminated the need for two additional barriers and that its corrective actions were complete. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.	08/09/95	COMPLETE	01/30/96
North Anna 1/2	In letters of 12/23/93 and 01/27/94, the licensee stated that it had replaced Thermo-Lag with 3M Interam in one application, added Gypsum Board over Thermo-Lag in another application, and performed engineering evaluations for the remaining applications. In a letter of 03/28/95 the licensee stated that, except for radiant energy shields, it did not rely any longer on Thermo-Lag barriers. The licensee submitted an exemption for radiant energy heat shields in reactor building on 12/15/95. Ampacity derating is not applicable because power cables were not enclosed in Thermo-Lag.		COMPLETE	03/28/95
Oyster Creek	FIRE: In letters of 02/10/94, 09/16/94, and 12/27/94, the licensee stated it planned to revise the safe shutdown analysis, perform engineering evaluations, request exemption, modify circuits, replace or upgrade some barriers. The staff called the licensee on 04/16/97 to discuss its corrective actions and schedule. On the basis of the information obtained during the call, the staff concluded that a meeting would be necessary. The staff met with the licensee on 05/02/97 to discuss its proposed completion schedule. On the basis of the information obtained during the meeting, the staff concluded that the licensee is making progress towards resolution of the Thermo-Lag issue. However, during the meeting, the staff asked the licensee to consider if it could expedite its schedule. The licensee agreed to do so.		12/98	
	AMPACITY: The licensee is evaluating the effects of upgrades on existing barriers. Calculations indicate that maximum allowable derating factors exceed TSI specifications (8% for 1-hour and 11% for 3-hour). Staff/ SNL review of licensee response is ongoing.		COMPLETE	
Palisades	FIRE: In a letter of 02/10/94, the licensee stated it planned to reroute cables or remove all Thermo-Lag and replace cables with 1-hour fire-rated cables, embed conduit in concrete, and complete all corrective actions by the end of the 1996 refueling outage. In a letter dated 01/06/96, the licensee stated that all corrective actions had been completed. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal.	04/17/95	COMPLETE	01/06/97

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² Licensee Scheduled Completion: Licensee's scheduler commitment for implementing corrective action plan.

³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

PLANT	CORRECTIVE ACTION PLANS/STATUS	LICENSING ACTION COMPLETE ¹	LICENSEE SCHEDULED COMPLETION ²	LICENSEE IMPLEM. DATE ³
Palo Verde 1/2/3	<p>FIRE: In letters of 02/07/94 and 12/22/94, the licensee stated it planned to revise safe shutdown analysis, perform engineering evaluations, credit operator actions, upgrade barriers, and perform additional fire tests. In a letter of 12/20/95, the licensee stated that it had eliminated the need for about 80 percent of the Thermo-Lag and confirmed completion of the corrective actions by 12/31/96. In a letter dated 12/31/96, the licensee submitted the status of corrective actions and stated that it planned to complete field modifications by the third quarter of 1997. On 01/15/97 the staff issued an RAI to the licensee regarding Thermo-Lag barriers installed inside containment and on heating, ventilation, air conditioning as well as cable tray supports. The staff met with the licensee on 02/19/97 to discuss its proposed completion schedule. On the basis of the information obtained during the meeting, the staff concluded that the licensee is making progress and that the new completion schedule was acceptable.</p>		06/98	
	<p>AMPACITY: In a letter dated 12/30/96, the licensee stated it planned to complete its analysis of the ampacity derating issues by the end of the second quarter of 1997. Staff/SNL review is ongoing.</p>		06/97	
Peach Bottom 2/3	<p>FIRE: In a letter of 12/19/94, the licensee stated it planned to revise the safe shutdown analysis, replace or upgrade barriers, add suppression, reroute cables, and request exemptions. The staff met with the licensee on 04/14/97. On the basis of the information obtained during the meeting, the staff could not evaluate the progress made by the licensee. The staff will meet again to discuss the details of the licensee plans and schedules.</p>		10/99	
	<p>AMPACITY: In the 05/02/96 response to a staff RAI, the licensee stated that the ampacity derating evaluation will be performed in conjunction with the fire endurance qualification evaluation which is scheduled to be completed by 12/31/97. Staff/SNL review is ongoing.</p>		12/97	
Perry 1	<p>FIRE: In letters of 02/11/94 and 12/15/94, the licensee stated it was considering engineering evaluations, revision of the safe shutdown analysis, exemptions, and rerouting of cables. The licensee committed to complete corrective actions by 12/96. Following a site visit the week of 09/09/96, for a separate fire protection issue, the staff questioned whether the licensee would meet its commitment of 12/96. By letter dated 10/02/96, the licensee informed the staff that the completion of corrective actions had been changed from 12/96 to 11/97. The staff called the licensee on 04/17/97 to discuss this new completion schedule. On the basis of the information obtained during the call, the staff concluded that the licensee is making progress and that the new completion schedule is acceptable.</p>		11/97	
	<p>AMPACITY: Staff/SNL review is ongoing.</p>		COMPLETE	

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³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

PLANT	CORRECTIVE ACTION PLANS/STATUS	LICENSING ACTION COMPLETE ¹	LICENSEE SCHEDULED COMPLETION ²	LICENSEE IMPLEMENT. DATE ³
Prairie Island 1/2	<p>FIRE: In a letter of 02/10/94, the licensee stated it planned to revise the safe shutdown analysis, reroute cables, and replace Thermo-Lag barriers with Dermatt barriers. In letters of 03/29/95 and 06/30/95, the licensee stated that it planned to replace all Thermo-Lag with Dermatt barriers. In a letter of 12/31/96, the licensee informed the staff it would not meet its commitment to resolve the Thermo-Lag issues by the end of 1996. The licensee stated that it would complete removal and replacement of Thermo-Lag by January 1997, and that additional small projects identified as a result of Appendix R reanalysis would be complete by 06/30/97.</p> <p>AMPACITY: The licensee will submit an ampacity derating analysis for final closeout review.</p>		06/97	
River Bend 1	<p>FIRE: In letters of 02/09/94 and 12/21/94, the licensee stated it planned to revise the safe shutdown analysis, replace or upgrade Thermo-Lag barriers, modify circuits, downgrade 3-hour barriers to 1-hour and add suppression, and perform additional fire testing. By letter of 11/06/96, the licensee submitted a deviation and confirmed that corrective actions were on schedule. On 04/08/97, the staff called the licensee to discuss its corrective actions and schedule. On the basis of the information obtained during the call, the staff concluded that the licensee has been making progress and that the completion schedule is acceptable.</p> <p>AMPACITY: Staff/ SNL review is ongoing.</p>		11/97	
Saint Lucie 1/2	<p>FIRE: The licensee originally planned to use a performance-based approach as outlined in a letter of 02/11/94. Plans from the 03/28/95 and 10/27/95 letters were to revise safe shutdown analysis, modify circuits, replace or upgrade barriers, add suppression, exemptions, and perform additional fire testing. In a letter of 08/27/96, the licensee indicated that modifications would be completed during the Spring of 1997 for Unit 2 and earlier than planned (fall of 1997) for Unit 1, with closure of Thermo-Lag issues and submit¹ of a summary report within 6 months of the outages. The staff met with the licensee on 04/04/97 to discuss a new proposed completion schedule of 12/98 for Unit 1. The completion date for Unit 2 remains unchanged. On the basis of the information obtained during the meeting, the staff concluded that the licensee is making progress and that the new completion schedule is acceptable.</p> <p>AMPACITY: Staff/SNL review is ongoing.</p>		12/98	
San Onofre 1	Shutdown.	N/A	N/A	N/A
San Onofre 2/3	In a deviation request approved by the NRC staff on 06/29/88 the licensee committed to replace its 4 barriers with 2-hour fire resistive barriers. By letter of 12/21/93, the licensee confirmed it had completed the replacement and that all actions related to the resolution of the Thermo-Lag issue were implemented. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal.	10/25/93	COMPLETE	12/21/93

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³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

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Sequoyah 1/2	<p>FIRE: In letters of 02/10/94 and 03/25/95, the licensee stated it planned to perform tests to qualify the installed Thermo-Lag material, upgrade conduits smaller than 3-inch diameter, junction boxes, and other unique configurations. In letters of 06/15/95, 01/12/96 and 09/09/96, the licensee discussed fire tests it conducted to evaluate potential chemical difference between Thermo-Lag used for qualification testing and some of the Thermo-Lag installed at the site. On the basis of the results of the tests, the licensee concluded that there was no difference between the two materials. In the letter of 09/09/96, the licensee informed the staff that it had changed its completion date for resolving the Thermo-Lag issues from 10/96 to 01/00. The staff met with the licensee on 11/11/96 to discuss the significant extension of its schedule and informed the licensee at the end of the meeting that it had not resolved its concerns and that it needed additional information. The licensee sent additional information by letter dated 12/09/96. The staff has reviewed this response and determined that an additional meeting with the licensee and a plant site visit are needed. The meeting and site visit will be scheduled during May 1997.</p>		01/00	
	<p>AMPACITY: The licensee will use Watts Bar test data. Staff/SNL review is ongoing.</p>		COMPLETE	
Shearon Harris 1	<p>FIRE: In letters of 02/14/94 and 12/27/95, the licensee stated that it planned to revise the safe shutdown analysis, reroute cables, and remove/replace Thermo-Lag. During a conference call on 03/31/97, the licensee informed the staff that its completion date was changed from 04/97 to 09/97. The staff asked the licensee to confirm this completion schedule change in writing.</p>		04/97	
	<p>AMPACITY: The licensee will evaluate instrument and control circuits for the anticipated temperature rise.</p>		03/97	
South Texas 1/2	<p>FIRE: In letters of 12/19/94 and 03/28/95, the licensee stated that it reduced reliance on Thermo-Lag by requiring only one of three trains of safe shutdown equipment to be available. For the remaining Thermo-Lag applications, the licensee submitted, on 04/13/95, a deviation to downgrade the Thermo-Lag barriers from 3-hours to 1-hour.</p>	04/04/97	COMPLETE	
	<p>AMPACITY: The licensee considers site-specific tests performed by Underwriters Laboratories acceptable for existing plant design. Staff/SNL review is ongoing.</p>		COMPLETE	
Summer	<p>FIRE: In letters of 02/11/94, 03/23/95, and 03/29/96, the licensee stated it planned to eliminate the use of Thermo-Lag in five locations by installing fire-rated cables and by performing engineering evaluations. In a letter of 10/17/96, the licensee submitted a deviation request for fire-rated cables. This request is under staff review.</p>		11/97	
	<p>AMPACITY: Staff/SNL review is ongoing.</p>		11/97	

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Surry 1/2	In letters of 12/23/93 and 01/27/94, the licensee stated that it had replaced Thermo-Lag with Pyrocrete 241 in one application and performed engineering evaluations for the remaining applications. In a letter of 07/26/95, the licensee stated it no longer relied on Thermo-Lag. In a letter of 12/15/95, the licensee submitted an exemption for Thermo-Lag radiant energy heat shields. Ampacity derating is not applicable because power cables were not enclosed in Thermo-Lag.		COMPLETE	07/26/95
Susquehanna 1/2	FIRE: NEI Lead Plant. In a letter of 02/03/94, the licensee stated that the options considered were to revise the safe shutdown analysis, perform engineering evaluations, request deviations, replace or upgrade barriers, and modify circuits. In a letter of 12/22/94, the licensee stated that Thermo-Lag resolution through reanalysis was the only realistic approach to resolve the issue, that the reanalysis would be completed during the second quarter of 1997, and that it would provide, at that time, a schedule for completing any required modifications. The staff met with the licensee on 05/02/97 to discuss its proposed completion schedule. On the basis of the information obtained during the meeting, the staff concluded that the licensee is making progress towards resolution of the Thermo-Lag issue. However, during the meeting, the staff asked the licensee to consider if it could expedite its schedule. The licensee agreed to do so.		12/00	
	AMPACITY: Staff RAI issued 12/18/96. The staff is awaiting the licensee response.		12/00	
Three Mile Island 1	FIRE: In a letter of 02/10/94, the licensee stated that plans were to revise the safe shutdown analysis, request exemptions, replace/upgrade Thermo-Lag, reroute cables, and install detection and/or suppression. The staff called the licensee on 04/16/97 to discuss its corrective actions and schedule. On the basis of on the information obtained during the call, the staff concluded that a meeting would be necessary. By letters dated 08/16/96 and 12/31/96, the licensee submitted exemptions for 1-hour and 3-hour fire barriers. The staff met with the licensee on 05/02/97 to discuss its proposed completion schedule. On the basis of the information obtained during the meeting, the staff concluded that the licensee is making progress towards resolution of the Thermo-Lag issue. However, during the meeting, the staff asked the licensee to consider if it could expedite its schedule. The licensee agreed to do so.		11/99	
	AMPACITY: Licensee found that internal envelope temperature measure in the field would not result in long term cable degradation. On the basis of those test results, the licensee determined that the ampacity derating values were acceptable. No further actions will be taken for existing Thermo-Lag barriers. Future upgrades will be evaluated on an approach similar to the original analytical methodology. Staff/SNL review is ongoing.		COMPLETE	
Trojan	Shutdown.	N/A	N/A	N/A

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Turkey Point 3/4	<p>FIRE: In a letter of 02/07/94, the licensee stated it planned to revise the safe shutdown analysis and use a performance-based approach. The staff and the licensee have met several times to discuss concerns with the licensee's plans. During 05/96, the staff visited the site to review Thermo-Lag configurations. At the conclusion of the site visit, the licensee informed the staff that it would revise its corrective action plans. In a letter of 09/27/96, the licensee stated that it would begin to implement modifications for indoor Thermo-Lag fire barriers during the 1997 refueling outages and complete the modifications in 1999, a year later than originally scheduled. The licensee has not submitted its revised plan and schedule for the Thermo-Lag barriers installed in outdoor areas. The licensee submitted an exemption request by letter dated 12/12/96. The staff met with the licensee on 01/07/97 to discuss its proposed corrective action program and completion schedule for indoor and outdoor areas. As a result of the meeting, the licensee agreed to provide detailed information on the prioritization of all work and the methodology for determining priorities. A plant site visit is scheduled for 05/06/97 to discuss the licensee's proposed corrective actions.</p> <p>AMPACITY: Staff/SNL review is ongoing.</p>		05/99	
Vermont Yankee	<p>By letter of 06/01/93, the licensee informed the staff that it no longer relied on Thermo-Lag and that the Thermo-Lag barriers had been abandoned in place. In response to a staff RAI, the licensee provided details regarding corrective actions to eliminate reliance on Thermo-Lag in a letter of 06/28/93. The licensee stated that, in one application, cables were rerouted and in another application, the Thermo-Lag was replaced with 3M Interam. With regard to ampacity derating, the licensee will assess potential age-related effects of Thermo-Lag on cables for the time period prior to removal and maintain the evaluation on site for future inspection.</p>	04/14/97	COMPLETE	06/01/93
Vogtle 1/2	<p>FIRE: In a letter of 12/19/94, the licensee stated it planned to revise the safe shutdown analysis, modify circuits, and possibly redefine fire areas. In a letter of 05/10/95, the licensee stated that it had decided to remove Thermo-Lag and that all required modifications for both units would be completed by startup from the Unit 2 Spring 1998 refueling outage. By letter dated 11/05/96, the licensee informed the staff that it planned to complete corrective actions by 10/97, six months ahead of schedule.</p> <p>AMPACITY: The licensee will assess potential age-related effects associated with the installation of Thermo-Lag material for the time period prior to removal and maintain the evaluation on site for future inspection.</p>	12/10/96	10/97	

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Washington Nuclear 2	FIRE: In letters of 02/11/94 and 11/09/94, the licensee stated it planned to revise the safe shutdown analysis and plant design, reroute cables, operator actions, replace or upgrade Thermo-Lag, add suppression, and revise fire area boundaries. In a letter of 05/10/95, the licensee stated that it would replace Thermo-Lag with other fire barriers materials in areas where barriers cannot be eliminated. In a letter dated 05/03/96, the licensee submitted a revised schedule extending the program by two years to 12/99. The staff met with the licensee on 04/29/97. On the basis of the information obtained during the call, the staff concluded that the revised completion schedule is acceptable. The staff plans to meet with the licensee again to monitor the progress of corrective actions	08/10/95	12/99	
	AMPACITY: The licensee will assess potential age-related effects associated with the installation of Thermo-Lag material for the time period prior to removal and maintain on site for future inspection.		COMPLETE	
Waterford 3	In a letter of 05/18/94, the licensee stated that it would install upgrades, removal/replacement barriers, and request exemptions. In a letter of 12/21/94, the licensee stated that its Thermo-Lag applications involved HVAC ducts and that it had been found these applications acceptable on the basis of engineering evaluations. Ampacity derating is not applicable because Thermo-Lag is only used to protect HVAC ducts.	04/22/97	COMPLETE	12/21/94
Watts Bar 1	FIRE: The staff approved the Thermo-Lag barrier program in Supplement 18 to NUREG-0847, "Safety Evaluation Report related to the operation of Watts Bar Nuclear Power Plant, Units 1 and 2." With regard to ampacity derating, the staff/SNL review of ampacity test results is ongoing.	10/16/95	COMPLETE	12/18/95
Watts Bar 2	Cancelled.	N/A	N/A	N/A
Wolf Creek 1	FIRE: In letters of 02/09/94, 02/15/95, 03/10/95, and 06/27/95, the licensee considered revising the safe shutdown analysis, rerouting circuits, performing engineering evaluations, installing detection and suppression, and replacing barriers. In a letter of 06/20/96, the licensee stated it had decided to replace Thermo-Lag with another material. By letter dated 02/03/97, the licensee confirmed that corrective actions to restore the operability of Thermo-Lag barriers were complete.	03/20/97	COMPLETE	02/03/97
	AMPACITY: Staff/SNL review is ongoing.		COMPLETE	
Yankee Rowe	Shutdown.	N/A	N/A	N/A
Zion 1/2	In a letter of 07/12/96, the licensee stated that, as of 07/95, the Thermo-Lag barriers had been removed and replaced with Darmatt barriers except for radiant energy shields in two applications involving pressurizer level transmitter signal cables. In a letter of 01/11/96, the licensee submitted an exemption for these radiant energy heat shields. In a letter dated 01/17/97, the licensee confirmed that the actions to address Thermo-Lag 330-1 fire barriers had been completed. Ampacity derating is not applicable because power cables were not enclosed with Thermo-Lag.	09/05/96	COMPLETE	01/17/97

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³ Licensee Implementation Date: Date of licensee letter confirming completion of corrective actions.

In July 1996, the staff issued NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," which documented its technical assessment of penetration seals. As a result of recent Congressional inquiries, the staff has initiated an assessment of seal problems reported since it performed the assessment discussed in the NUREG report. The staff will use the insights from this effort to determine if additional NRC or industry actions on fire barrier penetration seals is needed. This effort is not a part of the FP-TAP but is being tracked by the staff in a separate mini action plan. It should be noted that an assessment of penetration seals is part of the recently developed Fire Protection Functional Inspection procedure.

Attachments: As stated (3)

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SEMIANNUAL STATUS REPORT ON THE FIRE PROTECTION TASK ACTION PLAN AND
PLANT-SPECIFIC THERMO-LAG CORRECTIVE ACTION PROGRAMS

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In July 1996, the staff issued NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," which documented its technical assessment of penetration seals. As a result of recent Congressional inquiries, the staff has initiated an assessment of seal problems reported since it performed the assessment discussed in the NUREG report. The staff will use the insights from this effort to determine if additional NRC or industry actions on fire barrier penetration seals is needed. This effort is not a part of the FP-TAP but is being tracking by the staff in a separate mini action plan. It should be noted that an assessment of penetration seals is part of the recently developed Fire Protection Functional Inspection procedure.

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For those schedular commitments that extend beyond 1997, the staff is considering issuing confirmatory orders to ensure that the licensees meet the schedules. After the staff completes the meetings and considers the additional information it requested, it will provide a paper to the Commission with its conclusions and its plans for ensuring that the licensees continue to make progress towards overall resolution of the Thermo-Lag issue and meet their schedular commitments.

In July 1996, the staff issued NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," which documented its technical assessment of penetration seals. The staff recently learned of potential problems with RTV silicone foam penetration seals. As a result, the staff has initiated an assessment of seal problems reported since it performed the assessment discussed in the NUREG report. The staff will use the insights from this effort to determine if additional NRC or industry actions on fire barrier penetration seals is needed. This effort is not a part of the FP-TAP but is being tracking by the staff in a separate mini action plan.

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In July 1996, the staff issued NUREG-1552, "Fire Barrier Penetration Seals in Nuclear Power Plants," which documented its technical assessment of penetration seals. The staff recently learned of potential problems with RTV silicone foam penetration seals. As a result, the staff has initiated an assessment of seal problems reported since it performed the assessment discussed in the NUREG report. The staff will use the insights from this effort to determine if additional NRC or industry actions on fire barrier penetration seals is needed. This effort is not a part of the FP-TAP but is being tracking by the staff in a separate mini action plan.

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MEMORANDUM TO: Chairman Jackson
 Commissioner Rogers
 Commissioner Dicus
 Commissioner Diaz
 Commissioner McGaffigan

FROM: L. Joseph Callan
 Executive Director for Operations

SUBJECT: SEMIANNUAL STATUS REPORT ON THE FIRE PROTECTION TASK ACTION
 PLAN AND PLANT-SPECIFIC THERMO-LAG CORRECTIVE ACTION PROGRAMS

The fourth semiannual report on the status of the Fire Protection Task Action Plan is attached (Attachment 1). Since the previous status report (memorandum of October 31, 1996, from James M. Taylor, Executive Director for Operations, to the Commission), the staff has worked on the risk-informed, performance-based fire protection rulemaking; the fire protection functional inspection program; and the self-induced station blackout study.

As reported in the previous status report, the staff has completed the Thermo-Lag Action Plan, but continues to monitor plant-specific Thermo-Lag corrective action plans and schedules. The licensees for 44 units have informed the staff that all corrective actions are complete. The licensees for 16 units have committed to completion dates in 1997. The completion dates for the remaining units are: 1998 (9 units), 1999 (9 units), and 2000 (4 units). See Attachment 2. Since the previous status report, the staff has met with the licensees with completion schedules that extend beyond 1997. The staff will meet with the licensee for Crystal River 3 during May 1997. During the meetings, the staff requested additional information from the licensees for Limerick 1/2; Peach Bottom 2/3; Oyster Creek; Sequoyah 1/2; Susquehanna 1/2; Turkey Point 3/4; and Washington Nuclear Project 2. The staff will have followup meetings with the licensees for Limerick, Peach Bottom, Sequoyah, and Turkey Point. For the remaining plants, on the basis of information submitted by the licensees and provided during the meetings, the staff has concluded that the schedules are acceptable. For those commitments that extend beyond 1997, the staff is considering issuing confirmatory orders to ensure schedules are met. The detailed status of plant-specific corrective actions is shown in Attachment 3.

Attachments: As stated (3)

cc: SECY
 OPA
 OGC
 OIG
 OCA

CONTACT: Daniele H. Oudinot, SPLB\DSSA\NRR
 (301) 415-3731

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MEMORANDUM TO: Chairman Jackson
Commissioner Rogers
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan

FROM: L. Joseph Callan
Executive Director for Operations

SUBJECT: SEMIANNUAL STATUS REPORT ON THE FIRE PROTECTION TASK ACTION
PLAN AND PLANT-SPECIFIC THERMO-LAG CORRECTIVE ACTION PROGRAMS

The fourth semiannual report on the status of the Fire Protection Task Action Plan is attached (Attachment 1). Since the previous status report (memorandum of October 31, 1996, from James M. Taylor, Executive Director for Operations, to the Commission), the staff has worked on the risk-informed, performance-based fire protection rulemaking; the fire protection functional inspection program; and the self-induced station blackout study.

As reported in the previous status report, the staff has completed the Thermo-Lag Action Plan, but continues to monitor plant-specific Thermo-Lag corrective action plans and schedules. The licensees for 44 units have informed the staff that all corrective actions are complete. The licensees for 16 units have committed to completion dates in 1997. The completion dates for the remaining units are: 1998 (9 units), 1999 (9 units), and 2000 (4 units). See Attachment 2. Since the previous status report, the staff has met with the licensees with completion schedules that extend beyond 1997. (The staff will meet with the licensee for Crystal River 3 during May 1997). During the meetings, the staff requested additional information from the licensees for Limerick 1/2; Peach Bottom 2/3; Oyster Creek; Sequoyah 1/2; Susquehanna 1/2; Turkey Point 3/4; and Washington Nuclear Project 2. The staff will have followup meetings with the licensees for Limerick, Peach Bottom, Sequoyah, and Turkey Point. For the remaining plants, on the basis of information submitted by the licensees and provided during the meetings, the staff has concluded that the schedules are acceptable. For those commitments that extend beyond 1997, the staff is considering issuing confirmatory orders to ensure schedules are met. The detailed status of plant-specific corrective actions is shown in Attachment 3.

Attachments: As stated (3)

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are acceptable. For those commitments that extend beyond 1997, the staff is considering issuing confirmatory orders to ensure schedules are met. The detailed status of plant-specific corrective actions is shown in Attachment 3.

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MEMORANDUM TO: Chairman Jackson
 Commissioner Rogers
 Commissioner Dicus
 Commissioner Diaz
 Commissioner McGaffigan

FROM: L. Joseph Callan
 Executive Director for Operations

SUBJECT: SEMIANNUAL REPORT ON THE STATUS OF THE FIRE
 PROTECTION TASK ACTION PLAN AND PROGRESS REPORT ON
 THERMO-LAG

The fourth semiannual report on the status of the Fire Protection Task Action Plan (FP-TAP) is attached.

Since the last status report, the staff continued to work on FP-TAP issues. The staff worked on the risk-informed, performance-based fire protection rulemaking; the Fire Protection Functional Inspection program; and the self-induced station blackout study.

As reported in the last status report, the staff completed the Thermo-Lag Action Plan and continues to closely monitor corrective action plans and schedules for the resolution of the Thermo-Lag issue. Licensees for 82 units needed to perform corrective actions. To date, licensees for 44 units have informed the staff that all corrective actions are complete, licensees for 16 units have committed to completion dates in 1997, 9 in 1998, 8 in 1999, and 5 in 2000 (see Appendix 1). The staff has met with the licensees whose completion schedules extend beyond 1997 to discuss corrective actions and schedules. Except for Sequoyah 1/2 and Turkey Point 3/4, the staff concluded that progress was being made and that the schedules were acceptable. The staff is currently considering the issuance of orders to confirm schedules that extend beyond 1997. Appendix 2 to this report gives the status of Thermo-Lag plant-specific corrective actions.

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