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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

April 10, 2006

NRC GENERIC LETTER 2006-03: POTENTIALLY NONCONFORMING HEMYC AND MT FIRE BARRIER CONFIGURATIONS

ADDRESSEES

All holders of operating licenses for light-water nuclear power reactors, except those who have ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this generic letter (GL) to:

(1) Request that addressees evaluate their facilities to confirm compliance with the existing applicable regulatory requirements in light of the information provided in this GL and, if appropriate, take additional actions. Specifically, although Hemyc and MT[1] fire barriers in nuclear power plants (NPPs) may be relied on to protect electrical and instrumentation cables and equipment that provide safe shutdown capability during a fire, 2005 NRC testing has revealed that both materials failed to provide the protective function intended for compliance with existing regulations, for the configurations tested using the thermal acceptance criteria from the National Fire Protection Association (NFPA) Standard 251, "Standard Methods of Fire Tests of Building Construction and Materials."[2] The NRC staff applied the supplemental guidance in GL 86-10, Supplement 1, "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area" for the test details of thermocouple number and location, and

(2) Require that addressees submit a written response to the NRC in accordance with NRC regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(f).

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[1]Hemyc and MT are commonly-used names for the fire barrier types discussed in this GL. The references to Hemyc and MT in this GL apply to any fire barriers using the materials and configuration described on pages 4 and 5 of this GL.

[2]American Society for Testing and Materials E-119, "Fire Test of Building Construction Materials," and NFPA 251 are essentially equivalent.

BACKGROUND

The NRC's concern with the performance of fire barriers at NPPs began with the failure of Thermo-Lag to pass performance tests in October 1989 at Southwest Research Institute. The tests were done for the Gulf States Utilities Company after visual observations of degradation of Thermo-Lag at River Bend Station. In June and August 1992, two sets of full-scale fire endurance tests on Thermo-Lag were conducted at Omega Point Laboratories in San Antonio, Texas, by Texas Utilities Electric Company for Comanche Peak Steam Electric Station, with similar results. In July 1992, the NRC sponsored a series of small-scale fire endurance tests at the National Institute of Standards and Technology. Again, 1-hour and 3-hour rated Thermo-Lag barrier material failed to consistently provide its intended protective function.

On August 6, 1991, the NRC issued Information Notice (IN) 91-47, "Failure of Thermo-Lag Fire Barrier Material to Pass Fire Endurance Test," the first in a series of INs issued between 1991 and 1995 on performance test failures and installation deficiencies related to Thermo-Lag 330 fire barrier systems.

Because of questions about the ability of 1-hour and 3-hour rated Thermo-Lag fire barrier material to perform its specified function, and because of the widespread use of Thermo-Lag in the nuclear industry, the NRC issued the following generic communications to inform licensees of the Thermo-Lag test results and to request that licensees implement appropriate compensatory measures and develop plans to resolve any noncompliances with 10 CFR 50.48:

- Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System To Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage," June 24, 1992,

- Bulletin 92-01, Supplement 1, "Failure of Thermo-Lag 330 Fire Barrier System To Perform its Specified Fire Endurance Function," August 28, 1992,

- GL 92-08, "Thermo-Lag 330-1 Fire Barriers," December 17, 1992, and

- Supplement 1 to GL 86-10, "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used To Separate Redundant Safe Shutdown Trains Within the Same Fire Area," March 25, 1994.

GL 92-08 included the NRC staff expectation that licensees review other fire barrier materials and systems credited for 10 CFR 50.48 compliance and consider actions to avoid problems similar to those identified with Thermo-Lag.

In response, the licensees reviewed their fire protection safe shutdown plans to determine if corrective actions were needed. Some licensees had made conservative commitments and installed Thermo-Lag in locations where it was not needed to satisfy NRC requirements; therefore, no corrective actions were required. Where fire barrier materials were required, licensees took one or a combination of the following corrective actions:

- Rerouted cables through other fire areas so that redundant safe shutdown trains were not located in the same fire area,

- Replaced Thermo-Lag, or the affected material, with an alternative rated fire barrier material,

- Upgraded the installed fire barriers to a rated configuration, and

- Concluded that certain Thermo-Lag barriers were no longer required.

Subsequently, deficiencies were also identified in other fire barrier materials. In 1993, for example, Kaowool® installed as a 1-hour rated fire barrier was found to be unable to pass circuit integrity tests. In response, the NRC staff reassessed previous reviews of Kaowool® fire barriers and informed the industry and the Commission of the potential failure of Kaowool® to perform as intended and suggested additional testing of Kaowool® (SECY-99-204; Agencywide Documents Access and Management System (ADAMS) Accession No. ML992810028). To resolve the issue, the industry took voluntary corrective actions.

In August 1993, the Nuclear Energy Institute (NEI) formed a Fire Barrier Review Ad Hoc Advisory Committee to address the adequacy of fire barrier materials other than Thermo-Lag. The Committee performed reviews of the original testing of the fire barrier material Hemyc in the early 1980s in Spain, and concluded that Hemyc was differently constructed than Thermo-Lag 330-1 and was not subject to the same failure modes as Thermo-Lag 330-1. In May 1994, this review was documented in the NEI report, "Documentation of the Adequacy of Fire Barrier Materials in Raceway Applications Vis-á-vis Failure Characteristics Inherent to the Thermo-Lag 330-1."

In September 1993, the NRC staff conducted pilot-scale fire endurance tests at the National Institute of Standards and Technology to investigate the performance characteristics of fire barrier materials. Because simplified and small-scale assembly models were used, the NRC staff intended to apply the test results for screening purposes only. The test results indicated unacceptable performance in approximately one-third of the assemblies tested. Although Hemyc was tested, the result was inconclusive because the configuration tested was inconsistent with the installation configuration recommended by the manufacturer. Details of these tests are documented in a March 1994 report (ADAMS Accession No. ML9610170283).

In September 1995, after assessing the scope of licensees' corrective actions, the NRC staff informed the Commission that a broader scope of inspections was needed to close out the Thermo-Lag action plan due to the broad range of corrective action options submitted by licensees. Rather than the stand-alone Thermo-Lag fire barrier inspection program proposed in the original action plan (submitted to the Commission in 1992), the NRC staff recommended a Fire Protection Functional Inspection (FPFI) program. SECY-96-267 (ADAMS Accession No. ML9701080067) provides details of the proposed FPFI, and includes a review of safe shutdown design and licensing bases. The NRC staff developed and implemented the FPFI program following issuance of the Commission's staff requirements memorandum in February 1997.

Beginning in late 1999, three plant-specific findings by the NRC staff raised concerns about the performance of Hemyc and MT fire barriers.

- In November 1999, during an inspection at Shearon Harris Nuclear Power Plant (IR 50-400/99-13, ADAMS Accession No. ML003685341), the inspection team noted that the acceptance of the Hemyc and MT fire barrier materials used was based on American Nuclear Insurers (ANI) Bulletin No. 5 test acceptance criteria, even though

the ANI test methodology clearly stated that the tests were for insurance purposes only and were not the equivalent of fire barrier endurance tests for fire barrier ratings.

- In October and November 2000, during an inspection at McGuire, Units 1 and 2 (IR 50-369/00-09, 50-370/00-09, ADAMS Accession No. ML003778709), the inspection team noted that the licensee was unable to provide documentation demonstrating protection by Hemyc fire barrier material used to separate safe shutdown functions for two trains within a single fire area.

- In September 2000, during an inspection at Waterford 3 (IR 50-382/00-07, ADAMS Accession No. ML003773900), the inspectors noted that the Hemyc materials were installed in configurations which were usually not bounded by the existing tests.

In June 2001, the NRC initiated confirmatory fire tests in response to Task Interface Agreement 99-028 (ADAMS Accession No. ML003736721), after concluding that existing testing was likely insufficient to qualify Hemyc or MT as rated fire barriers. The NRC tests were based on ASTM E-119 standard time-temperature conditions, for typical Hemyc and MT installations used in U.S. NPPs. Thermocouple placement was based on the current NRC guidance in GL 86-10, Supplement 1. The test results indicated that Hemyc and MT fire barriers did not pass the criteria to achieve a 1-hour fire rating for Hemyc or a 3-hour fire rating for MT for the configuration tested.

On April 1, 2005, the NRC issued IN 2005-07, “Results of Hemyc Electrical Raceway Fire Barrier System Full Scale Fire Testing.” This IN describes the results of the NRC-sponsored confirmatory testing of Hemyc. However, the NRC staff recognized that additional evaluations would be needed to determine whether regulatory compliance exists in light of the concerns identified in IN 05-07.

On April 29, 2005, the NRC staff held a public meeting with licensees and interested members of the public to discuss the Hemyc and MT test results and the NRC staff’s intention to take additional regulatory action to ensure that appropriate measures were under way for compliance with 10 CFR 50.48 requirements at affected plants. This GL is the follow-on to IN 05-07.

On January 20, 2006, the Director of the Office of Nuclear Reactor Regulation (NRR) published a notice in the Federal Register (71 FR 3344) announcing the issuance of a Director's Decision granting in part a 10 CFR 2.206 petition filed by the Nuclear Information and Research Service. The petition requested, among other things, that the NRC determine the extent of condition of the inoperable fire barrier through the use of a generic communication, and require sites that use these fire barriers to provide justification for operation in their response to the generic communication. The Director of NRR granted these requested actions in the petition and will use this generic communication to perform the requested actions. Issuance of this GL constitutes the regulatory action referred to in the Director's Decision.

The NRC has established a Web page to keep the public informed of the status of the Hemyc/MT fire barrier issue at *http://www.nrc.gov/reactors/operating/ops-experience/fire-protection/fire-barriers.html*. This page provides links to information on related fire protection issues, along with documentation of NRC interactions with industry (including generic communications, industry submittals, meeting notices, presentation materials, and meeting summaries). The NRC will continue to update this Web page as new information becomes available.

Hemyc Construction—Hemyc fire barrier material consists of mats of 2 inch Kaowool® ceramic fiber insulation inside an outer covering of Refrasil®[3] high-temperature fabric. The mats are custom-sized for the electrical raceway, junction box, or other intended application, and machine-stitched to produce the factory mats. Hemyc mats, which are installed over a metal frame to embody the 2 inch air gap design, are identical except that 1½ inch Kaowool® is used instead of 2 inch material.

MT Construction—MT is usually used with conduits and has four layers. The first layer, closest to the conduit or other intended application, is 1 inch of Kaowool® ceramic fiber blanket wrapped in a fiberglass fabric. The second layer is a 2 mil sheet of stainless steel. The third layer is a hydrate packet. This packet is made by stitching together packets of aluminum trihydrate in a fiberglass-coated fabric. The fourth and outermost layer is a 1½ inch Kaowool® blanket wrapped in Refrasil®. The configuration is slightly different for air drops and structural supports. Air drops use a 3 inch blanket of Kaowool® as the inner layer. Structural supports do not have the hydrating packet layer or the stainless steel sheet.

DISCUSSION

Hemyc and MT fire barrier systems were installed at NPPs to protect circuits and other electrical and instrumentation features in order to meet regulatory requirements and in accordance with plant-specific commitments. The NRC conducted confirmatory testing of Hemyc and MT materials at the Omega Point Laboratories in San Antonio, Texas. The tests indicated that when tested to NFPA 251 thermal acceptance criteria, with thermocouples placed in accordance with the guidance in GL 86-10, Supplement 1, neither the Hemyc nor the MT fire barrier system could provide its rated fire barrier protection. Fire barriers installed in configurations that are not capable of providing the designed level of protection are considered nonconforming installations.

The NRC staff noted at least two failure modes in the limited test program. One failure mode resulted from shrinkage of the outer covering, exposing the interior surfaces or layers to the fire. The second failure mode resulted from failure to adequately protect steel structural supports intruding into the fire barrier. The standard used by some utilities required protection of 3 inches of intruding steel for the Hemyc 1-hour fire barrier and 18 inches of intruding steel for the MT 3-hour fire barrier. The test results indicated that additional protection of intruding steel was required to achieve a 1-hour or 3-hour fire rating.

Based on these test results, the NRC is concerned that the Hemyc and MT fire barriers may not provide the level of fire endurance intended by licensees, and that licensees that use Hemyc or MT may not be conforming with their licensing basis. 10 CFR 50.48 requires that each operating NPP have a fire protection plan that satisfies 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 3, “Fire Protection.” GDC 3 requires that structures, systems, and components important to safety be designed and located to minimize, in a manner consistent with other requirements, the probability and effect of fires and explosions. Fire protection features required to satisfy 10 CFR 50.48 include features to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured. One means of complying with this requirement is to separate one safe shutdown train from its redundant train with rated fire barriers. The duration of fire resistance required of

[3]Refrasil® was used during NRC tests. Siltemp® and Refrasil® were tested by the NRC and determined to be essentially equivalent (ADAMS Accession No. ML051190055).

the barriers, usually 1-hour or 3 hours, depends on the other fire protection features in the fire area. The NRC issued guidance on acceptable methods of satisfying GDC 3 in the branch technical positions (BTPs) and GLs identified in the "Applicable Regulatory Guidance" section of this GL.

The NRC staff requests licensees to review their fire protection programs in light of information in IN 05-07 and this GL and implement appropriate compensatory measures and develop plans to resolve any nonconformances.

NRC Inspection Manual, Part 9900, Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," dated September 26, 2005, provides guidance on acceptable treatment of nonconformances. Licensees are also encouraged to review Regulatory Issue Summary 2005-07, "Compensatory Measures to Satisfy the Fire Protection Program Requirements," in determining the appropriate compensatory measures to meet fire protection program requirements for nonconforming fire barrier installations. All licensees should consider the impact of fire barrier functionality on affected equipment and assess the impact on plant safety.

If licensees identify nonconforming conditions, they have several options. A licensee may make plant modifications, for example, replacing the Hemyc or MT fire barriers with an appropriately rated fire barrier material, upgrading the Hemyc or MT to a rated barrier, or rerouting cables or instrumentation lines through another fire area. Alternatively, licensees may voluntarily commit to 10 CFR 50.48(c), NFPA 805 Standard, and by following the process in the rule and the NFPA 805 standard, establish compliance through the application of technical evaluations that consider potential adverse effects, risk, defense-in-depth (DID), and safety margins.

APPLICABLE REGULATORY REQUIREMENTS

NRC regulations in 10 CFR 50.48 and 10 CFR Part 50, Appendix A, GDC 3, require each operating NPP to have a fire protection plan providing post-fire safe shutdown. That is, a means must be provided to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured.

APPLICABLE REGULATORY GUIDANCE

The NRC issued guidance on acceptable methods of satisfying the regulatory requirements of GDC 3 in Auxiliary and Power Conversion Systems Branch (APCSB) BTP 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," May 1, 1976; Appendix A to APCSB BTP 9.5-1, February 24, 1977; and Chemical Engineering Branch BTP 9.5-1, "Fire Protection for Nuclear Power Plants," July 1981. In response to licensees' questions, the NRC staff provided additional guidance on fire barriers in GL 86-10, "Implementation of Fire Protection Requirements."

In the BTPs and in GL 86-10, the NRC staff stated that the fire resistance ratings of fire barriers should be established in accordance with NFPA 251, by subjecting a test specimen that represents the materials, workmanship, method of assembly, dimensions, and configuration for which a fire rating is desired to a "standard fire exposure." Supplement 1 to GL 86-10 provides additional guidance for testing fire barrier endurance and for evaluating deviations from tested

configurations. This guidance is repeated in RG 1.189, "Fire Protection for Operating Nuclear Power Plants."

REQUESTED ACTIONS

Within 60 days of the date of this letter, all addressees are requested to determine whether or not Hemyc or MT fire barrier material is installed and relied upon for separation and/or safe shutdown purposes to satisfy applicable regulatory requirements. In addition, licensees are asked to describe controls that were used to ensure the adequacy of other fire barrier types, consistent with the assessment requested in GL 92-08.

Addressees that credit Hemyc or MT for compliance are requested to provide information regarding the extent of the installation, whether the material complies with regulatory requirements, and any compensatory actions in place to provide equivalent protection and maintain the safe shutdown function of affected areas of the plant in light of the recent findings associated with Hemyc and MT. Licensees are requested to provide evaluations to support conclusions that they are in compliance with regulatory requirements for the Hemyc and MT applications. Licensees that cannot justify their continued reliance on Hemyc or MT are requested to provide a description of corrective actions taken or planned and a schedule for milestones, including when full compliance will be achieved.

Compensatory and corrective actions must be implemented in accordance with existing regulations commensurate with the safety significance of the nonconforming condition. The NRC expects all licensees to fully restore compliance with 10 CFR 50.48 and submit the required documentation to the NRC by December 1, 2007.

REQUESTED INFORMATION

All addressees are requested to provide the following information:

1. Within 60 days of the date of this GL, provide the following:

    a. A statement on whether Hemyc or MT fire barrier material is used at their NPPs and whether it is relied upon for separation and/or safe shutdown purposes in accordance with the licensing basis, including whether Hemyc or MT is credited in other analyses (e.g., exemptions, license amendments, GL 86-10 analyses).

    b. A description of the controls that were used to ensure that other fire barrier types relied on for separation of redundant trains located in a single fire area are capable of providing the necessary level of protection. Addressees may reference their responses to GL 92-08 to the extent that the responses address this specific issue.

2. Within 60 days of the date of this GL, for those addressees that have installed Hemyc or MT fire barrier materials, discuss the following in detail:

    a. The extent of the installation (e.g., linear feet of wrap, areas installed, systems protected),

b. Whether the Hemyc and/or MT installed in their plants is conforming with their licensing basis in light of recent findings, and if these recent findings do not apply, why not,

c. The compensatory measures that have been implemented to provide protection and maintain the safe shutdown function of affected areas of the plant in light of the recent findings associated with Hemyc and MT installations, including evaluations to support the addressees' conclusions, and

d. A description of, and implementation schedules for, corrective actions, including a description of any licensing actions or exemption requests needed to support changes to the plant licensing basis.

3. No later than December 1, 2007, addressees that identified in 1.a. Hemyc and/or MT configurations are requested to provide a description of actions taken to resolve the nonconforming conditions described in 2.d.

REQUIRED RESPONSE

In accordance with 10 CFR 50.54(f), an addressee is required to respond as described below so that the NRC can determine whether a facility license should be modified, suspended, or revoked, or whether other action should be taken.

Within 30 days of the date of this GL, addressees are required to submit a written response if they are unable to provide the information or it cannot meet the requested completion date. Addressees are requested to address any alternative course of action that they propose to take, including the basis for the acceptability of the proposed alternative course of action.

The required written response should be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, 11555 Rockville Pike, Rockville, Maryland 20852, under oath or affirmation under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). In addition, a copy of the response should be submitted to the appropriate regional administrator.

REASON FOR INFORMATION REQUEST

The recent confirmatory testing of the Hemyc and MT fire barriers revealed that similar barriers installed at NPPs may not perform their intended protective function during a fire. The NRC staff will review the responses to this GL and will notify addressees if concerns are identified regarding compliance with NRC regulations. The NRC staff may also conduct inspections to determine addressees' effectiveness in addressing the GL.

RELATED GENERIC COMMUNICATIONS

4. Regulatory Issue Summary 05-07, "Compensatory Measures To Satisfy the Fire Protection Program Requirements," April 19, 2005.

5. IN 05-07, "Results of Hemyc Electrical Raceway Fire Barrier System Full Scale Fire Testing," April 1, 2005.

6. IN 99-17, “Problems Associated with Post-Fire Safe-Shutdown Circuit Analysis,” June 3, 1999.

7. IN 95-52, Supplement 1, “Fire Endurance Test Results for Electrical Raceway Fire Barrier Systems Constructed from 3M Company Interam Fire Barrier Materials,” March 17, 1998.

8. IN 95-49, Supplement 1, “Seismic Adequacy of Thermo-Lag Panels,” December 10, 1997.

9. RIS 2005-20, Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, “Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability,” September 26, 2005.

10. IN 97-70, “Potential Problems With Fire Barrier Penetration Seals,” September 19, 1997.

11. IN 97-59, “Fire Endurance Test Results of Versawrap Fire Barriers,” August 1, 1997.

12. IN 94-86, Supplement 1, “Legal Actions Against Thermal Science, Inc., Manufacturer of Thermo-Lag,” November 15, 1995.

13. IN 95-52, “Fire Endurance Test Results for Electrical Raceway Fire Barrier Systems Constructed from 3M Company Interam Fire Barrier Materials,” November 14, 1995.

14. IN 95-49, “Seismic Adequacy of Thermo-Lag Panels,” October 27, 1995.

15. IN 95-32, “Thermo-Lag 330-1 Flame Spread Test Results,” August 10, 1995.

16. IN 95-27, “NRC Review of Nuclear Energy Institute, “Thermo-Lag 330-1 Combustibility Evaluation Methodology Plant Screening Guide,” May 31, 1995.

17. IN 94-86, “Legal Actions Against Thermal Science, Inc., Manufacturer of Thermo-Lag,” December 22, 1994.

18. IN 94-34, “Thermo-Lag 330-660 Flexi-Blanket Ampacity Derating Concerns,” May 13, 1994.

19. IN 94-28, “Potential Problems With Fire Barrier Penetration Seals,” April 5, 1994.

20. GL 86-10, Supplement 1, “Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area,” March 25, 1994.

21. IN 94-22, “Fire Endurance and Ampacity Derating Test Results for 3-Hour Fire-Rated Thermo-Lag 330-1 Fire Barriers,” March 16, 1994.

22. IN 93-41, “One Hour Fire Endurance Test Results for Thermal Ceramics Kaowool, 3M Company FS-195 and 3M Company Interam E-50 Fire Barrier Systems,” May 28, 1993.

23. IN 93-40, “Fire Endurance Test Results for Thermal Ceramics FP-60 Fire Barrier Material,” May 26, 1993.

24. GL 92-08, “Thermo-Lag 330-1 Fire Barriers,” December 17, 1992.

25. IN 92-82, “Results of Thermo-Lag 330-1 Combustibility Testing,” December 15, 1992.

26. Bulletin 92-01, Supplement 1, “Failure of Thermo-Lag 330 Fire Barrier System to Perform its Specified Fired Endurance Function,” August 28, 1992.

27. IN 92-55, “Current Fire Endurance Test Results for Thermo-Lag Fire Barrier Material,” July 27, 1992.

28. Bulletin 92-01, “Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free From Fire Damage,” June 24, 1992.

29. IN 92-46, “Thermo-Lag Fire Barrier Material Special Review Team Final Report Findings, Current Fire Endurance Tests, and Ampacity Calculation Error,” June 23, 1992.

30. IN 91-79, “Deficiencies in the Procedures for Installing Thermo-Lag Fire Barrier Materials,” December 6, 1991.

31. IN 91-47, “Failure of Thermo-Lag Fire Barrier Material To Pass Fire Endurance Test,” August 6, 1991.

32. IN 88-56, “Potential Problems With Silicone Foam Fire Barrier Penetration Seals,” August 4, 1988.

33. GL 88-12, “Removal of Fire Protection Requirements From Technical Specifications,” August 2, 1988.

34. GL 86-10, “Implementation of Fire Protection Requirements,” April 26, 1986.

35. GL 83-33, “NRC Position on Certain Requirements of Appendix R to 10 CFR Part 50,” October 19, 1983.

36. GL 81-12, “Fire Protection Rule (45 FR 76602, November 19, 1980),” February 20, 1981.

BACKFIT DISCUSSION

Under the provisions of Section 182.a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), this GL asks addressees to evaluate their facilities to confirm compliance with the existing applicable regulatory requirements discussed in this GL. Specifically, although Hemyc and MT fire barriers in NPPs may be relied on to protect electrical and instrumentation cables and equipment that provides safe shutdown capability during a fire, 2005 NRC testing revealed that these materials may not provide the protective function intended for compliance

with existing regulations. The NRC staff performed these tests using the fire barrier thermal acceptance criteria from NFPA 251; the test details of thermocouple spacing and arrangement were applied in accordance with the guidance in GL 86-10, Supplement 1.

This GL is an information request in accordance with 10 CFR 50.54(f). Information requests are not considered by the NRC to be subject to the Backfit Rule, 10 CFR 50.109. Furthermore, this GL is based on current regulations and guidance and does not constitute a change in NRC staff position. Accordingly, the NRR staff's interpretations of current fire protection requirements in this GL do not constitute backfitting as defined in 10 CFR 50.109(a)(i).

The NRC staff has determined, in accordance with 10 CFR 50.54(f), that the information sought in this GL is necessary to verify licensee compliance with current licensing basis for each facility. If licensees identify nonconforming conditions, they have several options. A licensee may make plant modifications, for example, replacing the Hemyc or MT fire barriers with an appropriately rated fire barrier material, upgrading the Hemyc or MT to a rated barrier, or rerouting cables or instrumentation lines through another fire area. Alternatively, licensees may voluntarily commit to 10 CFR 50.48(c), NFPA 805 Standard, and by following the process in the rule and the NFPA 805 Standard, establish compliance through the application of technical evaluations that consider potential adverse effects, DID, and safety margins.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment on this GL was published in the *Federal Register* (70 FR 42596) on July 25, 2005.

SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this GL is not a major rule and the Office of Information and Regulatory Affairs of the Office of Management and Budget (OMB) has confirmed this determination.

PAPERWORK REDUCTION ACT STATEMENT

This GL contains information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by OMB, clearance no. 3150-0011, which expires February 28, 2007.

The burden to the public for these mandatory information collections is estimated to average 120 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments on any aspect of these information collections, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T5-F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0011), Office of Management and Budget, Washington, DC 20503.

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The NRC may not conduct or sponsor, and a person is not required to respond to, an information collection, unless the requesting document displays a currently valid OMB control number.

CONTACT

Please direct any questions about this matter to the technical contacts or the Lead Project Manager listed below, or to the appropriate NRR project manager.

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Note: NRC generic communications may be found on the NRC public Web site, http://www.nrc.gov, under Electronic Reading Room/Document Collections.

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