POLICY ISSUE
(Information)

March 24, 2006 SECY-06-0068

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations /RA/

SUBJECT: ISSUANCE OF GENERIC LETTER 2006-XX, "POTENTIALLY NONCONFORMING HEMYC AND MT FIRE BARRIER CONFIGURATIONS"

PURPOSE:

To inform the Commission that the staff intends to issue the subject generic letter (GL). This paper does not address any new commitments or resource implications.

BACKGROUND:

In 1981, the NRC issued Section 50.48 of Title 10 of the *Code of Federal Regulations* (10 CFR), the fire protection rule. The rule requires protection of safe shutdown capabilities in the event of a fire. One means of complying with this requirement is to separate one safe shutdown train from its redundant trains using rated fire barriers. Consequently, a number of licensees installed Hemyc and MT fire barrier systems in U.S. nuclear power plants (NPPs) to protect circuits and other electrical and instrumentation components and/or systems in accordance with regulatory requirements and plant-specific commitments.

In 1989, fire barrier performance became an issue with the failure of Thermo-Lag fire barriers to pass performance tests. The NRC issued several generic communications relating to nonconforming fire barrier configurations, and, based on these communications, licensees committed to take corrective actions. The staff also developed an action plan to resolve the Thermo-Lag issue. The action plan included implementation of a fire protection functional inspection program.

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In 1999, plant-specific fire protection inspection findings raised concerns about the performance of Hemyc and MT fire barriers. The NRC regional offices and the Office of Nuclear Reactor Regulation (NRR) established a task interface agreement to address the concerns. The NRC concluded that existing testing was likely insufficient to properly qualify either Hemyc or MT as rated fire barriers.

In 2005, the NRC completed the confirmatory fire endurance test program for Hemyc and MT fire barriers, which began in 2001. These tests were based on National Fire Protection Association (NFPA) Standard 251, "Standard Methods of Fire Tests of Building Construction and Materials" (essentially equivalent to American Society for Testing and Materials (ASTM) Standard E-119, "Fire Test of Building Construction Materials"). The configurations tested modeled typical Hemyc and MT configurations used in nuclear power plants and were based on industry input. For thermocouple arrangement and spacing, the staff also applied guidance from 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."

The NRC test results conducted in March and April 2005 indicated that the NRC tested Hemyc fire barriers did not meet the NFPA thermal acceptance criteria for a 1-hour fire rating for Hemyc, and the NRC tested MT fire barriers did not meet the criteria for a 3-hour rating. In April 2005, the NRC issued Information Notice 2005-07, "Results of Hemyc Electrical Raceway Fire Barrier System Full Scale Fire Testing," notifying licensees of the test findings. Hemyc and MT installed in configurations that are not capable of providing the designed level of protection are considered nonconforming installations. However, NRC recognized that plant-specific assessments are needed to determine compliance with existing regulatory requirements for any plant that relies on Hemyc and/or MT for compliance. Therefore, the staff concluded that the information notice should be followed up with a GL.

DISCUSSION:

In the GL, the staff of the U.S. Nuclear Regulatory Commission (NRC) asks licensees of light-water nuclear power reactors to inform the NRC whether they use Hemyc or MT fire barrier systems at their facilities. The staff requests that licensees who use Hemyc or MT inform the NRC whether they continue to conform with the plant's licensing basis, in light of the recent test results, the compensatory measures adopted for nonconforming conditions, and the planned corrective actions. In addition, the staff requests that all licensees provide a description of the controls that were used to ensure that other fire barrier types relied on for separation of redundant trains of safe shutdown equipment located in a single fire area are capable of providing the necessary level of protection. A copy of the proposed GL is provided as Enclosure 1. The staff dispositioned public comments (Enclosure 2) on the draft GL published in the *Federal Register* on July 25, 2005.

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), the NFPA 805 standard, follow the process in the rule and the NFPA 805 standard, and establish compliance through the application of technical evaluations that consider potential adverse effects, risk, defense-in-depth (DID), and safety margins.

Since the Hemyc and MT tests revealed that the fire barrier systems did not meet the acceptance criteria, the staff concluded that performance of other fire barrier systems may also be suspect. Therefore, the GL also requests a description of controls that were used to ensure the adequacy of other fire barrier types. This request is consistent with the earlier GL 92-08, which conveyed the staff's expectation that fire barrier systems other than Thermo-Lag be assessed in light of the findings on Thermo-Lag. This is a change from the draft GL that the staff issued for public comment, but the staff's position is that nonconforming conditions may exist with other fire barriers providing separation for redundant trains in a single fire area. This staff position is based on historical issues identified with various other fire barriers and the staff's position that fire barrier issues may stem from a generic problem with licensees installing fire barriers improperly. Additionally, the staff simplified some of the discussion in the GL and clarified the requested information.

The staff has assessed whether immediate regulatory action is necessary while licensees respond to the subject GL, and has determined that continued operation is justified for several reasons. As a 1-hour rated fire barrier, Hemyc is installed only in fire areas where fire detection and automatic fire suppression systems are present or the licensee has previously obtained an approved exemption to the automatic fire suppression requirement because such suppression was deemed unnecessary (for example, there is negligible fire potential). The Hemyc fire barrier systems used at the plant are, therefore, just one of several layers of DID (fire detection, manual suppression, and automatic suppression are other layers of DID).

In addition, the ASTM-E119 standard fire test performed by the NRC exposed the Hemyc material to higher temperatures and more rapid rises in temperature than are expected to occur due to a fire in fire areas where Hemyc fire barrier systems are installed. The NRC considers the safety margins between the test and actual conditions to be wide enough that the integrity of installed Hemyc fire barrier systems is unlikely to be challenged.

For MT (which consists of several layers of materials, the outermost being Hemyc), the staff also concluded that the risk was low because, in NRC confirmatory testing, MT provided nearly an hour of protection in every test run, providing sufficient time for fire suppression by a fire brigade before cable damage is expected to occur.

During the December 8, 2005, public meeting of the Advisory Committee on Reactor Safeguards (ACRS) on the subject GL, a Nuclear Energy Institute (NEI) representative commented that the information request for a description of programmatic controls in place to ensure the adequacy of other fire barrier types is a backfit. The NEI representative also said this was "another example" of how the staff misuses GLs to backfit the industry.

The staff disagrees with NEI because the GL is a request for information. Furthermore, the GL addresses some of the same issues communicated in GL 92-08, that fire barrier systems other than Thermo-Lag be assessed for potential degradation in light of the findings on Thermo-Lag. GL 92-08 did not require any response from addressees regarding barriers other than Thermo-Lag. The industry failed to identify the inadequacy of Hemyc and MT. The staff has, therefore, concluded that a written response is necessary to assure the ability of fire barrier systems to perform their intended safety function.

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 (NIRS). The petition requested, among other things, that the NRC determine the extent of condition of the inoperable fire barriers 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 the generic communication process to perform the requested actions. Issuance of this GL constitutes the regulatory action referred to in the Director's Decision.

COORDINATION:

The Committee To Review Generic Requirements (CRGR) reviewed the GL on November 29, 2005, and endorsed it after the staff incorporated the CRGR comments. The ACRS reviewed the GL on December 8, 2005, and recommended that it be issued. The Office of the General Counsel reviewed the GL and had no legal objection to its content. The Office of the Chief Financial Officer reviewed the GL and had no objections based on budget or financial management concerns or potential resource impacts.

The subject GL is not a major “rule” under the Small Business Regulatory Enforcement Fairness Act of 1996, and the Office of Management and Budget has confirmed this determination.

/RA/

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Enclosures:
1. Generic Letter 2006-XX
2. Resolution of Public Comments Table

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

NRC GENERIC LETTER 2006-XX: 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:

(2) 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

(3) 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.

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[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).

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 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:

2. 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.

3. 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.

4. 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

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

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

7. IN 99-17, "Problems Associated with Post-Fire Safe-Shutdown Circuit Analysis," June 3, 1999.

8. 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.

9. IN 95-49, Supplement 1, "Seismic Adequacy of Thermo-Lag Panels," December 10, 1997.

10. 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.

11. IN 97-70, "Potential Problems With Fire Barrier Penetration Seals," September 19, 1997.

12. IN 97-59, "Fire Endurance Test Results of Versawrap Fire Barriers," August 1, 1997.

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

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

15. IN 95-49, "Seismic Adequacy of Thermo-Lag Panels," October 27, 1995.

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

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

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

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

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

21. 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.

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

23. 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.

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

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

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

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

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

29. 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.

30. 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.

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

32. IN 91-47, “Failure of Thermo-Lag Fire Barrier Material To Pass Fire Endurance Test,”

August 6, 1991.

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

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

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

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

37. 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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U.S. Nuclear Regulatory Commission (NRC) Staff Resolution of Public Comments
on the Draft Generic Letter (GL) on Potentially Non-Compliant Hemyc/MT Fire Barriers
(by category and bin number)

Table 1. Key for Resolution of Comments

Source of Comments (ADAMS Accession Number)	**Comment Designator**	**Remarks**
PCI Promatec (ML052420492)	P	Received 8-23-05
Progress Energy (ML052660204)	E	Received 9-22-05
Duke Power (ML052860138)	D	Received 9-23-05
Nuclear Energy Institute (NEI) (ML052860142)	N	Received 9-26-05
Strategic Teaming and Resource Sharing (STARS) (ML052790367)	S	Received 10-5-05
Exelon/AmeriGen (ML052780386)	X	Received 10-4-05

Table 2. Key to Categories of Comments

Bin No.	**Description**
1	Comments on backfit determinations and justifications
2	Comments on schedule
3	Comments on Hemyc testing
4	Comments on use of risk-informed methods
5	Miscellaneous comments
6	Comments on wording and specific references in GL text
7	Comments on the burden estimate

BIN 1 - COMMENTS ON BACKFIT DETERMINATION AND JUSTIFICATIONS

Comment:

Duke Power Comment (D-1), Nuclear Energy Institute (NEI) Comment (N-1a), and Exelon/AmeriGen Comment (X-1) - The criteria of GL 86-10 Supplement 1 are not applicable to Hemyc installations that were previously accepted. Application of GL 86-10, Supplement 1 to previously accepted configurations should be evaluated under the backfit rule, 10 CFR 50.109. The application of GL 86-10, Supplement 1 is a new regulatory position.

Staff Response:

NRC staff agrees with these comments - The NRC has clarified that this GL is requesting licensees to describe their plant's compliance with their approved licensing basis, and does not require licensees to apply the methodology contained in GL 86-10, supplement 1, to previously accepted fire barrier installations. Licensees are requested to show that, based on the information gathered during the NRC testing, the assumptions used in the licensee's and NRC's acceptance of the existing configurations are still valid. GL 86-10, supplement 1, does not contain criteria for acceptance of fire barriers, acceptance criteria are contained in the rules and license commitments.

Comment:

Duke Power Comment (D-2) - The proposed GL does not accurately convey the McGuire Nuclear Station Hemyc qualification. Also, the excerpts from the above referenced inspection report do not completely describe the conclusions from the inspection report.

Staff Response:

NRC staff does not agree with this comment - The NRC is using the discussion of the McGuire inspection in the Background section of the GL to illustrate that the staff began to raise concerns regarding Hemyc after 1999. No conclusions regarding the acceptance of the McGuire specific configurations are being made in this GL, only restating portions of the inspection report to show that Hemyc concerns had been raised.

Comment:

Duke Power Comment (D-3) - Duke asks that the NRC provide clarification on the acceptance of '86-10 evaluations' that meet the same qualitative standards used in the past.

Staff Response:

NRC staff agrees in part with this comment - GL 86-10 evaluations that are not based on risk analysis are still applicable and acceptable for post-79 plants. See Bin 4 for more discussion on evaluations.

BIN 2 - COMMENTS ON SCHEDULE

Comment:

Progress Energy Comment (E-2), Strategic Teaming and Resource Sharing (STARS) Comment (S-12), and NEI Comment (N-4) - Some plants have significant amounts of Hemyc making the December 1, 2007, date for restoring compliance is unduly burdensome. NEI suggests the date be changed to December 1, 2008, would be needed to support additional testing as well.

Staff Response:

NRC staff does not agree with these comments – The NRC staff expects all licensees to fully restore compliance by December 1, 2007. This date was selected to allow at least one outage so work may not have to be performed in the vicinity of safety-related equipment during power operations. However, the NRC staff will consider extension requests to accommodate plant-specific needs related to design modifications and outage schedules. The NRC does not expect additional testing to be needed due to the recent NRC and industry testing that has been completed.

Comment:

Progress Energy (E-3) - Flexibility for compliance schedule is requested for those plants committed to NFPA 805 (10 CFR 50.48(c) - voluntary rule).

Staff Response:

NRC staff agrees with this comment - NFPA 805 discretion applies to the Hemyc/MT issue for those licensees that properly adopt 10 CFR 50.48(c). Licensees should propose their approach to resolving the Hemyc/MT issue, with the proposed schedule for resolution including reference to their letter of intent, in their response to the GL.

Comment:

Strategic Teaming and Resource Sharing (STARS) Comment (S-11) - 'Requested Actions' and 'Requested Information' – the 60-day time period for the initial response is arbitrary, and it may not allow sufficient time for licensees who are affected by this issue to adequately respond and provide the requested information. STARS recommends extending the initial response period to 90 days at a minimum so that an adequate and complete response can be developed by the licensee.

Staff Response:

NRC staff does not agree with this comment - With the public release of this draft GL and publication of Information Notice (IN) 05-07 in April 2005, licensees have had time to evaluations and corrective actions. Therefore, the NRC staff considers a 60-day response time from the issuance of the GL sufficient.

BIN 3 - COMMENTS ON HEMYC TESTING

Comment:

Progress Energy (E-1) - The NRC should review the Hemyc users' group test that was performed in August 2005. The results of that testing could have an impact on the application of some or all of the GL.

Staff Response:

NRC staff agrees with this comment - The NRC has considered the results of the recent industry testing in this generic letter. After carefully reviewing the industry tests, the NRC staff concludes that concerns about Hemyc performance have been confirmed by these test results. Therefore, the NRC staff intends to maintain the current course of action.

Comment:

Duke Power Comment (D-5) and NEI Comment (N-2) - Hemyc as used primarily throughout nuclear plants has an outer covering made of either Siltemp or a two-part blanket with Siltemp and Klevers. The GL should therefore note the original construction in this description section and note the material used in the NRC test to be a modified construction.

Staff Response:

NRC staff does not agree with this comment - The NRC confirmatory test results are consistent with the industry test results and with the installation procedure, the NRC staff considers the noted difference in construction insignificant and intends to maintain the current course of action. The details of the NRC tests are provided in IN 05-07 and on the NRC public Web site. The GL is intended not to replicate those details, but to focus on the implications and application of the test results.

Comment:

STARS Comment (S-2) - The NRC fire tests were performed in accordance with Generic Letter 86-10, Supplement 1. GL 86-10, Supplement 1 contains standards that are much more restrictive that those that were required for the initial testing and qualification of these fire barrier systems. The proposed generic communication should clearly indicate that the fire tests performed by the NRC did not duplicate the original fire tests that were performed to originally certify the HEMYC and MT fire barrier system product line.

Staff Response:

NRC staff does not agree with this comment - The NRC testing was based on a 1 or 3-hour fire rating, and using a fire that follows the NFPA 251 time-temperature curve. This is the same as was used during the original fire testing. The NRC requires the cables to remain free of fire damage. The test used a temperature threshold to demonstrate cable functionality. Other methods are available and discussed in NRC guidance documents.

Comment:

STARS Comment (S-5) - What configuration standard was used during the tests for protection of intruding steel, and consider limiting the discussion to the tested configuration.

Staff Response:

NRC staff does not agree with this comment - NRC tests did not include support structures or the barrier configurations within the furnace. Supports for the assemblies were located outside the furnace due to the concern that fire barrier penetration by supports inside the furnace might cause premature failure of the fire barrier system, with a resulting loss of

data. Supporting steel configurations were tested separately and did not affect the Hemyc and MT test results. Data can be taken from the supporting steel configurations that were tested and applied to plant specific configurations.

Comment:

STARS Comment (S-6) - It is inappropriate to declare the entire product line of Hemyc and MT fire barrier systems deficient based on limited samples.

Staff Response:

NRC staff agrees with this comment - The GL has been modified to consistently state that the NRC test results apply "for the configurations tested."

BIN 4 – COMMENTS ON RISK INFORMED METHODS

Comment:

Duke Power Comment (D-3), NEI Comment (N-3) and STARS Comment (S-9) - The NRC should accept a risk assessment approach for making changes to the approved fire protection program using a licensee's standard license condition without need for a license amendment. Also does the NRC intend to require a license amendment for risk-informed approaches that are applied to NFPA 805 transition?

Staff Response:

NRC staff does not agree with this comment - Currently the NRC has not approved risk assessment approaches for fire protection, therefore applications of these approaches should be submitted as part of a license amendment or exemption request as appropriate. As reflected in other risk-informed rules, such as 10 CFR 50.69, the NRC staff obtains assurance that licensees possess appropriate PRA capabilities before allowing licensees to use risk-informed methods without prior NRC approval. NRC staff encourages the use of risk insights in all regulatory matters, but using risk methods exclusively for self-approval of fire protection changes using the standard license condition is not considered acceptable by the staff at this time based on the reason previously stated.

Regarding application to NFPA 805 transition, this information has not yet been finalized, the NRC will publish this information as part of the planned regulatory guide for implementation of 10 CFR 50.48(c).

BIN 5 – MISCELLANEOUS COMMENTS

Comment:

NEI Comment (N-1b) - The utilities that use this system for compliance with NRC regulatory requirements have implemented compensatory and corrective actions in accordance with existing regulations commensurate with the safety significance of this issue, and plan to fully address this issue while maintaining defense-in-depth and the safety margins associated with currently approved fire protection programs.

Staff Response:

NRC staff agrees with this comment – This comment is consistent with the points included in the NRC's information request.

Comment:

NEI Comment (N-6) – A public meeting is requested with the licensees that use the Hemyc/MT fire barrier system to discuss specific compensatory and corrective actions, and schedules for resolution of NRC concerns.

Staff Response:

NRC staff agrees with this comment - The NRC staff held a public meeting September 29, 2005, following the September 23, 2005, closure of the public comment period. During that meeting NEI indicated that the September 29, 2005, meeting was sufficient and no additional meeting was needed.

Comment:

STARS Comment (S-1) A limited number of licensees use Hemyc or MT, therefore the proposed generic communication distribution should be limited to only those licensees that use these fire barrier systems, and that the draft generic letter should be revised accordingly to minimize the impact on those licensees that are not impacted by this issue.

Staff Response:

NRC staff does not agree with this comment - The NRC staff is concerned that other licensees unknown to NEI and the manufacturer may have installed these materials, due to the material's specifications being publicly available and based on the barriers reliance on generally available construction materials.

Also, the NRC staff is requesting information from all plants to ensure that other fire barriers have adequate programmatic controls in place to demonstrate compliance with applicable requirements. In GL 92-08, the NRC expected licensees to resolve all fire barrier issues. New issues identified with Hemyc and MT suggest to the NRC that a complete resolution had not been performed.

BIN 6 – COMMENTS ON WORDING AND SPECIFIC REFERENCES IN GL TEXT

Comment:

Duke Comment (D-4), Exelon Comment (X-2), and NEI Comment (N-5) – The GL is requesting a description of the existing programmatic controls that will insure that other fire barrier types will be assessed for potential degradation and resultant adverse effects. This request is too broad, instead the GL should specifically state that the licensee should describe the evaluation of other electrical raceway fire barrier systems (ERFBS) that may be subject to similar deficiencies. Also, more clearly define what is meant by 'programmatic controls.'

Staff Response:

NRC staff does not agree with these comments - GL 92-08 requested the evaluation of other fire barrier systems. The recent NRC tests revealed that these fire barriers may not function as intended, therefore the performance of other fire barrier systems may also be

suspect, since the same evaluation that missed potential problems with Hemyc and MT may have been applied to the other barrier materials.

A programmatic control is a program (plan or procedure) in place to ensure that all fire barriers will perform as intended, especially in light of new information that could affect their performance. Programmatic controls use some means of checking, testing, or verifying by evidence or experiments. For these reasons, the NRC staff did not include a description of the existing programmatic controls.

Comment:

STARS Comment (S-3) – The paragraph on Hemyc Construction is confusing. It appears that two different fire barrier configurations are being discussed. Please clarify, and provide additional information regarding the use and configuration of the second fire barrier.

Staff Response:

NRC staff does not agree with this comment - The paragraph in question discusses two configurations of Hemyc—i.e., the 2-inch mat used for direct wrap conduit and the 1½-inch mat used in the air gap design.

Comment:

STARS Comment (S-4) – The GL discusses 'three failure modes' of the fire barriers, but it implies only two 'types' of failures, i.e., shrinkage of the outer material, and inadequate protection of intruding steel members. Please provide additional information regarding the 'three failure modes,' or clarify that only two 'types' of failures were observed.

Staff Response:

The NRC staff agrees with this comment – The draft GL has been corrected to reflect two failure modes rather than three.

Comment:

STARS Comment (S-7) – The paragraph, beginning with 'NRC regulations' appears to be misplaced, and its meaning is unclear. Is the intent to state that an exemption or license amendment is an acceptable approach to resolving this issue?

Staff Response:

NRC does not agree with this comment - The intent is to state that properly justified exemptions or amendment requests, prepared in accordance with the plant-specific licensing basis, are acceptable approaches.

Comment:

STARS Comment (S-8) – In the paragraph beginning with 'NRC regulations,' should the word 'ratings' more appropriately be 'barriers' at the end of paragraph.

Staff Response:

The NRC staff agrees with this comment – The existing wording has been replaced with the wording proposed in the draft GL.

Comment:

STARS Comment (S-10) – In the Applicable Regulatory Guidance section, first paragraph, first reference to "GL 86-10" – The reference to 'GL 86-10' is incomplete, it should read "Generic Letter (GL) 86-10, 'Implementation of Fire Protection Requirements.'"

Staff Response:

NRC staff agrees with this comment - The suggested change has been made.

Comment:

PCI Promatec Comment (P-1) – Regarding the GL reference to the Hemyc manufacturer, Promatec Inc.; clarification is requested specifying that Peak Seals, Inc. purchased the assets of the manufacturer in 1997; but that Peak Seals, Inc. (now known as PCI Promatec) never marketed the Hemyc and MT technologies.

Staff Response:

NRC staff agrees with this comment - The GL reference to the manufacturer has been removed from the draft document because the NRC staff could not assure that Promatec, Inc manufactured all Hemyc materials installed in plants.

BIN 7 – COMMENTS ON BURDEN ESTIMATE

None