AmerGen Energy Company, LLC
200 Exelon Way
Suite 345
Kennett Square, PA 19348

www.exeloncorp.com

An Exelon/British Energy Company

10 CFR 50.90

January 14, 2003
5928-02-20193

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Technical Specification Change Request No. 317 – Deletion of Reactor Building Purge Air Treatment System Technical Specification Requirements

Three Mile Island, Unit 1 (TMI Unit 1)
Facility Operating License No. DPR-50
NRC Docket No. 50-289

In accordance with 10 CFR 50.4(b)(1), enclosed is Technical Specification Change Request No. 317.

The purpose of this Technical Specification Change Request is to revise TMI Unit 1 Technical Specification Sections 3.8.9, 3.15.2, 4.12.2, and associated Bases to delete the requirements for the Reactor Building Purge Air Treatment System. The air treatment portion of this system is not safety related and is not required to prevent or mitigate the consequences of any design basis accident scenario.

Information supporting this Technical Specification Change Request is contained in Enclosure 1 to this letter, and the proposed marked up Technical Specification pages are contained in Enclosure 2.

Using the standards in 10 CFR 50.92, AmerGen Energy Company, LLC (AmerGen) has concluded that these proposed changes do not constitute a significant hazards consideration, as described in the enclosed analysis performed in accordance with 10 CFR 50.91(a)(1). Pursuant to 10 CFR 50.91(b)(1), a copy of this Technical Specification Change Request is provided to the designated official of the Commonwealth of Pennsylvania, Bureau of Radiation Protection, as well as the chief executives of the township and county in which the facility is located.

A001

NRC approval of this change is requested by September 30, 2003 in order to eliminate unnecessary Technical Specification surveillance testing prior to fuel loading and refueling operations activities supporting TMI Unit 1 Refueling Outage 1R15, scheduled for October 2003.

No new regulatory commitments are established by this submittal. If any additional information is needed, please contact David J. Distel at (610) 765-5517.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

1-14-03
Executed On

Michael P. Gallagher
Director, Licensing & Regulatory Affairs
Mid-Atlantic Regional Operating Group

Enclosures: (1) TMI Unit 1 Technical Specification Change Request No. 317 Evaluation of Proposed Changes
(2) TMI Unit 1 Technical Specification Change Request No. 317 Markup of Proposed Technical Specification Page Changes

cc: H. J. Miller, Administrator, USNRC Region I
T. G. Colburn, USNRC Senior Project Manager, TMI Unit 1
J. D. Orr, USNRC Senior Resident Inspector, TMI Unit 1
D. Allard, Director, Bureau of Radiation Protection-PA Dept. of Environmental Resources
Chairman, Board of County Commissioners of Dauphin County
Chairman, Board of Supervisors of Londonderry Township
File No. 02076

ENCLOSURE 1

TMI Unit 1 Technical Specification Change Request No. 317

Evaluation of Proposed Changes

1.0 INTRODUCTION

This letter is a request to amend Operating License DPR-50 for Three Mile Island, Unit 1. The proposed changes would revise the Operating License by deleting the surveillance and operability requirements of the Reactor Building Purge Air Treatment System. The air treatment portion of this system is not safety related and is not required to prevent or mitigate the consequences of any accident scenario. In accordance with the rules and regulations delineated in the NRC Final Policy Statement, 60 FR 36953 and codified in 10CFR50.36, this ventilation system does not meet the criteria for inclusion in the Technical Specifications.

AmerGen Energy Company, LLC (AmerGen) requests that the following changed replacement pages be inserted into the existing Technical Specifications.

Revised Technical Specification Pages: ii, iv, 3-45, 3-45a, 3-62a, and 4-55b.

Technical Specification Pages 3-62b and 4-55c are deleted in their entirety.

The marked up pages showing the requested changes are provided in Enclosure 2.

2.0 DESCRIPTION OF PROPOSED AMENDMENT

This amendment request revises TMI Unit 1 Technical Specification 3.8.9 and associated Bases to remove the Reactor Building Purge Air Treatment System (fans and filter components) from the testing required prior to fuel loading and refueling operations, and eliminates the TMI Unit 1 Technical Specifications Sections 3.15.2 and 4.12.2, "Reactor Building Purge Air Treatment System" and their corresponding Bases. Technical Specification 3.8.9 operability and surveillance test requirements for the purge and vent isolation valves and associated radiation monitors are retained. The Reactor Building Purge Air Treatment System was originally required to be operable to mitigate the effects of accident dose consequences resulting from a postulated Fuel Handling Accident Inside the Reactor Building and from the postulated post-LOCA containment purge dose release. Recently, full implementation of the alternative radiological source term (AST) for assessing the consequences of a design base accident, in accordance with 10CFR50.67 and Regulatory Guide 1.183, was approved for TMI Unit 1 in License Amendment No. 235. Previous reanalysis performed to support Technical Specification Change Request (TSCR) No. 290, dated January 29, 2001 and approved by NRC in License Amendment No. 235, dated September 19, 2001, demonstrated that the dose consequences resulting from a LOCA remain below the limits specified in 10CFR50.67 and Regulatory Guide 1.183 without credit for the use of the Reactor Building Purge Air Treatment System to filter the assumed containment purge flow post-LOCA.

Additionally, previous reanalysis performed to support Technical Specification Change Request No. 249, dated January 23, 2001 and approved by NRC in License Amendment No. 236, dated October 2, 2001, demonstrated that the dose consequences resulting from a Fuel Handling Accident Inside the Reactor Building remain below the limits specified in 10CFR50.67 and Regulatory Guide 1.183 assuming no credit for containment integrity and no credit for the Reactor Building Purge Air Treatment System exhaust filtration prior to release to the environment.

Previous revision of Technical Specification 4.12.2 Bases, approved by the NRC in License Amendment No. 240, dated February 8, 2002, eliminated the design basis requirements for the hydrogen recombiners and the hydrogen purge system, and further clarified that the "reactor building purge no longer is relied upon to serve an operating accident mitigating (i.e. LOCA) function".

In summary, the current TMI Unit 1 licensing basis accident analysis incorporates the dose consequences from the postulated design basis Maximum Hypothetical Accident/LOCA and the Fuel Handling Accident Inside the Reactor Building using the Alternative Radiological Source Term methodology. The results of these analyses have demonstrated that with the exception of the purge and vent isolation valves, the original design requirements and accident mitigation functions of the Reactor Building Purge Air Treatment System are no longer applicable for TMI Unit 1. Additionally, the requirements for backup hydrogen purge capability have been removed from the TMI Unit 1 design basis. The Reactor Building Purge Air Treatment System is not a safety-related system. Therefore, Technical Specification 3.15.2, which specifies the minimum availability and efficiency for the Reactor Building Purge Air Treatment System and associated filters, and Technical Specification 4.12.2 surveillance requirements, are to be deleted. Additionally, the reactor building purge system fan and filter components will be deleted from Technical Specification 3.8.9 testing and operability requirements applicable prior to refueling operations. Technical Specification 3.8.9 and associated Bases are revised to clarify that this surveillance requirement applies only to the purge and vent isolation valves and radiation monitors which initiate purge isolation. There are no other Technical Specifications or Bases that will need to be revised as a result of this proposed change.

The removal of these requirements from the Technical Specifications will: (1) eliminate unnecessary operability and periodic surveillance test requirements for the fan and filter components, and (2) eliminate the burden of testing the filtration unit just prior to an outage with the possibility of having to stop the reactor building purge and delay entry into containment.

3.0 BACKGROUND

The original design basis of the Reactor Building Purge Air Treatment System was to mitigate the effects of: (1) a fuel handling accident radiological release inside the containment of TMI Unit 1, (2) post-LOCA containment purge flow radiological release, and (3) post-accident hydrogen gas concentration inside containment. The installed carbon filters of the Reactor Building Purge Air Treatment System, AH-F-1, were designed to remove 70% of the total radioiodine from the reactor building exhaust. Previous reanalysis performed to support Technical Specification Change Request (TSCR) No. 290, dated January 29, 2001 and approved by NRC in License Amendment No. 235, dated September 19, 2001, demonstrated that the dose consequences resulting from a LOCA remain below the limits specified in 10CFR50.67 and Regulatory Guide 1.183 without credit for the use of the Reactor Building Purge Air Treatment System to filter the assumed containment purge flow post-LOCA. Additionally, previous reanalysis performed to support Technical Specification Change Request No. 249,

dated January 23, 2001 and approved by NRC in License Amendment No. 236, dated October 2, 2001, demonstrated that the dose consequences resulting from a Fuel Handling Accident Inside the Reactor Building remain below the limits specified in 10CFR50.67 and Regulatory Guide 1.183 assuming no credit for containment integrity and no credit for the Reactor Building Purge Air Treatment System exhaust filtration prior to release to the environment. Additionally, TMI Unit 1 License Amendment No. 240, dated February 8, 2002, eliminated the design basis requirements for the hydrogen recombiners and the hydrogen purge system, and further clarified that the "reactor building purge no longer is relied upon to serve an operating accident mitigating (i.e. LOCA) function". As a result, it was determined that with the exception of the purge and vent isolation valves, the Reactor Building Purge Air Treatment System is not safety-related, and is no longer required for accident mitigation.

The purge and vent valves of the Reactor Building Purge System, AH-V-1A/B/C/D, are nuclear safety related and are subject to the requirements of Technical Specifications 1.7, "Containment Integrity" and 3.6, "Reactor Building." This License Amendment Request does not impact or revise these sections of the Technical Specifications or the requirements for these containment isolation valves. The purge and vent valves also interface with the radiation monitor RM-A9, which provides a close signal to the valves upon detection of high radiation in the purge exhaust. This monitoring and isolation function is not affected by this License Amendment Request. The radiation monitors that initiate the closing of the purge valves, AH-V-1A/B/C/D, will continue to be tested in accordance with the existing Technical Specification requirements in Technical Specification 3.8.9, and Tables 3.5-1, 3.5-3, 4.1-1 and 4.1-4.

The deletion of the Technical Specification Sections 3.15.2 and 4.12.2 will remove the unnecessary operability requirements and testing of system fan flow rates, DOP testing for High Efficiency Particulate Absolute (HEPA) filter banks, and halogenated hydrocarbon testing of the carbon adsorber banks for the Reactor Building Purge Air Treatment System prior to a refueling outage. The HEPA filter and charcoal adsorber banks will remain in the Reactor Building Purge Air Treatment System, and shall be tested in accordance with the Preventive Maintenance Program. Verification of fan operability, while removed from the Technical Specification surveillance test program, will continue to be tested in accordance with the Preventive Maintenance Program. Performance monitoring will be included in accordance with the TMI Unit 1 Preventive Maintenance Program.

4.0 REGULATORY REQUIREMENTS & GUIDANCE

The following Regulatory Guides and requirements were applicable to the original design of the Reactor Building Purge Air Treatment System:

- Regulatory Guide 1.4 is concerned with mitigation of radiation releases in accordance with 10CFR20 and 10CFR50.67. The Reactor Building Purge Air Treatment System was originally designed to filter potentially contaminated particles and gases prior to discharging to the atmosphere to limit the consequences of a Fuel Handling Accident Inside the Reactor Building and the Maximum Hypothetical Accident (MHA).

- Regulatory Guide 1.7 applies to control of combustible gas concentrations in containment following a LOCA.
- Regulatory Guide 1.29 identifies structures, systems and components designated as Seismic Category 1. This applies to the Reactor Building Purge Air Treatment System purge and vent valves, AH-V-1A/B/C/D.
- Regulatory Guide 1.52 provides requirements for cleanup systems designed to mitigate the consequences of a postulated accident or reduce the radioactivity released in an accident. This is applicable to the in-place DOP (dioctylphthalate) and halogenated hydrocarbon testing of filter AH-F-1, and the analysis of the carbon samples of the Reactor Building Purge Air Treatment System.
- Regulatory Guide 1.89 (used in conjunction with 10CFR50.49) is part of the Environmental Qualification Plan for TMI Unit 1 and applies to AH-V-1A/B/C/D, which are nuclear safety related and environmentally qualified.
- NUREG-0737, The containment vent and purge isolation function on high radiation is provided in response to NUREG-0737, Item II.E.4.2.7, "Containment Isolation Dependability."

Based on the previous revisions to the TMI Unit 1 licensing and design basis as approved by NRC in License Amendment Nos. 235, 236, and 240 described above, the requirements of Regulatory Guides 1.52 or 1.7 are no longer applicable to the Reactor Building Purge Air Treatment System since the system is not relied upon to mitigate the dose consequences of any design basis accident scenario or to provide mitigation of hydrogen gas concentration inside containment. With the exception of the Reactor Building purge isolation valves, AH-V-1A/B/C/D, the air treatment portion of the Reactor Building Purge Air Treatment System is not safety related and is not required to mitigate the consequences of a Fuel Handling Accident Inside the Reactor Building or a MHA/LOCA. In addition, the Reactor Building Purge Air Treatment System is not credited for the mitigation of any other type of design basis accident evaluated in Chapter 14.0 of the TMI Unit 1 Updated Final Safety Analysis Report (UFSAR). The calculations that were performed to support these previous license amendments demonstrated that the offsite dose consequences at the Exclusion Area Boundary (EAB), the Low Population Zone (LPZ), and in the control room resulting from the assumed unfiltered purge flow exhaust from the Reactor Building after a MHA/LOCA or the unfiltered release from the Reactor Building after a Fuel Handling Accident Inside the Reactor Building were sufficiently below the limits provided in 10CFR50.67 and Regulatory Guide 1.183.

10CFR50.36 delineates the requirements for the content of Technical Specifications. Items to be included are those that involve safety limits for important process variables or those that involve a limiting condition for operation. 10CFR50.36.c(2)(ii)(C), Criterion 3, states that a limiting condition for operation must be established for "a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier." The design basis of the Reactor Building Purge Air Treatment System does not meet this criterion or any other found in 10CFR50.36. Additionally, it is noted that the NRC-approved NUREG-1430, Revision 2, "Standard Technical Specifications Babcock & Wilcox Plants," does not specify requirements for the air treatment portion of this system.

5.0 TECHNICAL ANALYSIS

The Reactor Building Purge Air Treatment System was originally designed and installed in accordance with the intent of Regulatory Guide 1.4 specifically to mitigate the effects of the Fuel Handling Accident Inside the Reactor Building, post-LOCA containment purge flow release, and post-LOCA hydrogen gas concentration inside containment. Regulatory Guide 1.52, Revision 2, issued after the design of the system, applies to the in-place DOP (dioctylphthalate) and halogenated hydrocarbon tests of the HEPA filter and carbon adsorber banks, and carbon laboratory testing for the Reactor Building Purge Air Treatment System.

Previously approved calculations and analysis which supported implementation of the alternative radiological source term methodology for TMI Unit 1, in accordance with 10CFR50.67 and Regulatory Guide 1.183, were completed without taking credit for iodine removal by the Reactor Building Purge Air Treatment System. These analyses, approved by the NRC in License Amendment No. 235, dated September 19, 2001, and License Amendment No. 236, dated October 2, 2001 demonstrated that the dose consequences of a Maximum Hypothetical Accident and the Fuel Handling Accident Inside the Reactor Building, respectively, remain below the limits of 10CFR50.67 without the use of the Reactor Building Purge Air Treatment System HEPA filters or charcoal adsorbers. The current licensing basis as described in TMI Unit 1 UFSAR Sections 14.2.2.1.b.2, Fuel Handling Accident Occurring in the Reactor Building, Section 14.2.2.3.4, Environmental Analysis of Loss of Coolant Accidents, and Appendix 14C, Evaluation of Accident Dose, does not credit this system in any design basis accident scenario. Technical Specification 4.12.2 Bases was also previously updated to identify that the Reactor Building Purge System is no longer relied upon to serve an accident mitigating function. This License Amendment Request will not change nor impact the previously approved accident analysis described in Chapter 14 or Appendix 14C of the TMI Unit 1 UFSAR.

TMI Unit 1 License Amendment No. 240, dated February 8, 2002, removed the hydrogen recombiners and backup hydrogen purge capability from the TMI Unit 1 design basis. This design basis change was based on the conclusion that the containment could withstand the consequences of uncontrolled hydrogen/oxygen recombination without loss of safety function without credit for hydrogen recombiners or the hydrogen purge system for not only design basis cases, but also for more limiting severe accident sequences. Therefore, this original design function of the Reactor Building Purge Air Treatment System has also been eliminated.

As described in TMI Unit 1 UFSAR Section 5.6, the Reactor Building Purge System provides filtered and tempered air to the Reactor Building for purging during plant shutdowns and refueling outages. Operation of the system is also allowed to facilitate containment entry for specific reasons as delineated in existing TMI Unit 1 Technical Specification 3.6.10. Operation of the system reduces airborne activity levels to within 10CFR20 limits prior to reactor building entry. The intent is that following the first two hours of containment purge, personnel can enter the containment building and remain for 40 hours without exceeding the limits of 10CFR20. Exhaust air is filtered through the

air treatment system HEPA and carbon banks to reduce activity level prior to release to the environment. The containment atmosphere is sampled for iodine prior to and during the purging operation in accordance with approved plant operating procedures and administrative controls. The effluent is also continuously monitored during purge activities. This sampling and monitoring are performed to ensure that gaseous effluent releases to the environment are performed in accordance with the TMI Unit 1 Offsite Dose Calculation Manual (ODCM) and do not exceed the limits of 10CFR50, Appendix I.

The Reactor Building purge release path will continue to be monitored and releases reported in accordance with the TMI Unit 1 Technical Specification required Annual Radioactive Effluent Release Report. There are no changes to the method of operation or the controls of the system that would prevent it from purging the containment to meet the operational design basis of the system. Sampling and monitoring of the Reactor Building atmosphere prior to and during purging will continue to be performed in accordance with plant administrative controls. The controls and methodology established in the Offsite Dose Calculation Manual (ODCM) are not revised or impacted by this change. This system is also provided with controls to stop fans and alarm in the Control Room on high temperature indication or detection of combustible vapors in the supply system and to alarm in the Control Room upon loss of airflow. These control features will also not be impacted by this Technical Specification change. Reduction in the iodine levels of containment can also be achieved by use of the Reactor Building Kidney System, which filters the recirculated containment air through a carbon adsorber installed inside the Reactor Building.

Technical Specifications 3.15.2 and 4.12.2 delineate the testing requirements of the Reactor Building Purge Air Treatment System to demonstrate operability. These tests include in-place DOP and halogenated hydrocarbon tests at maximum available flows (ANSI N510-1980), laboratory carbon sample analysis (ASTM D3803-1989), pressure drop testing across the entire filter bed and air distribution testing. In addition, Technical Specifications require a flow rate of 50,000 cfm +/- 5000 cfm to prove operability of the Reactor Building Purge exhaust fans (AH-E-7A/B). These tests are currently incorporated into the Technical Specification surveillance test program. Upon deletion of these Technical Specification sections, the halogenated hydrocarbon testing of the carbon filter banks along with laboratory testing of the carbon adsorber will be removed from the Technical Specification surveillance test program. HEPA filter and charcoal adsorber testing will continue to be accomplished in accordance with the TMI Unit 1 Maintenance Program. Technical Specification 3.8.9 requires the Reactor Building Purge Air Treatment System, including the radiation monitors that initiate purge isolation, to be tested no more than one week prior to an outage. Technical Section 3.8.9 is revised to clarify that this requirement does not apply to the Reactor Building Purge Air Treatment System fan and filter components. The removal of these requirements from Technical Specification surveillance testing will eliminate the unnecessary burden of testing the filtration unit just prior to an outage with the possibility of having to stop the reactor building purge and delay entry into containment. The Technical Specification requirements for the Reactor Building Purge Exhaust Radiation Monitors and for the vent and purge isolation valves are maintained to ensure timely reactor building isolation upon detection of high radiation in the purge flow, and are not affected by the proposed change.

The safety-related portions of the Reactor Building Purge Air Treatment System are the containment isolation valves, AH-V-1A/B/C/D. The design bases of these valves are described in Chapter 5.3.3 of the TMI Unit 1 UFSAR. When the reactor is in cold shutdown, continuous purging of the Reactor Building at a rate of 50,000 cfm is permitted with the isolation valves full open. During all other plant conditions the isolation valves are limited to 30° open, restricting the purge rate to 14,000 cfm. This supports the conservative limiting existing design basis purge valve closure time of 3.5 seconds which ensures post accident valve closure well within the 1-minute assumption of the bounding design basis accident analysis. This operational methodology will not be revised or impacted by this License Amendment Request. Technical Specification 3.6, Reactor Building, provides the operability requirements for the containment isolation valves, AH-V-1A/B/C/D. This License Amendment Request will not impact or revise these Technical Specification requirements.

Conclusion

The proposed change to delete Technical Specification 3.15.2 and 4.12.2, "Reactor Building Purge Air Treatment System" reflects the current design function of the system. The Reactor Building Purge Air Treatment System fan and filter components are not safety-related and are no longer credited in any design basis accident scenario for TMI Unit 1. Removal of the Reactor Building Purge Air Treatment System from the Technical Specifications will not impact the safety of the plant or the public since this system is no longer considered a barrier to the dose consequences of a design basis accident for TMI Unit 1. Therefore, the Reactor Building Purge Air Treatment System does not meet the 10CFR50.36 criteria for inclusion in Technical Specifications. This system will continue to be operational and provide its operational design basis requirements as described in the TMI Unit 1 UFSAR. This proposed change results in an operational efficiency that is achievable in part from implementation of the alternative radiological source term. Removal of this system from Technical Specifications eliminates unnecessary operability and periodic surveillance test requirements for the fan and filter components. This simplifies testing and design tasks, and eliminates the unnecessary burden of testing the air treatment system immediately prior to a refueling outage. The system will continue to be monitored and tested under periodic operations surveillance and the TMI Unit 1 Preventive Maintenance Program. Consequently, the proposed Technical Specification changes will not adversely affect nuclear safety or safe plant operations.

6.0 REGULATORY ANALYSIS

This Technical Specification change will delete Sections 3.15.2 and 4.12.2, "Reactor Building Purge Air Treatment System" and revise Section 3.8.9, "Fuel Loading and Refueling." The Reactor Building Purge Air Treatment System, excluding the containment isolation valves AH-V-1A/B/C/D, is a non-safety related system whose primary function is to purge Reactor Building airborne contamination by filtering/adsorbing potentially contaminated particles and gases prior to discharging to the atmosphere. The system was originally designed in accordance with good engineering practices and the requirements of Regulatory Guide 1.4 to reduce radiation releases during purging operations and to mitigate the consequences of design basis accidents.

TMI Unit 1 License Amendment No. 235, dated September 19, 2001, approved full implementation of the alternative radiological source term methodology pursuant to 10CFR50.67 and Regulatory Guide 1.183. The analyses justifying the full implementation of the alternative radiological source term methodology included additional conservatisms, such as Reactor Building purge isolation time of 60 seconds rather than 5.0 seconds; Reactor Building activity for release based on 1.0 μCi/gm rather than the Technical Specification Section 3.1.4 limit of 0.35 μCi/gm; and Reactor Building purge activity directly released to the environment rather than through the Reactor Building Purge Air Treatment System HEPA and charcoal filters. The approved analysis results, based on these conservative assumptions, demonstrated that the dose consequences resulting from an unfiltered post-LOCA containment purge remain below the limits of 10CFR50.67. This calculation forms the basis of UFSAR Appendix 14C, "Evaluation of Accident Dose." License Amendment No. 236, dated October 2, 2001, approved use of the alternative radiological source term for evaluating the TMI Unit 1 Fuel Handling Accident Inside the Reactor Building, based on an approved analysis which assumed no credit for containment integrity or iodine removal by the Reactor Building Purge Air Treatment System.

The current design basis function for the Reactor Building Purge Air Treatment System is to provide a monitored and filtered release path for purging exhaust air from the Reactor Building during normal operations, and shutdown and refueling operations as allowed by existing Technical Specifications. Reactor Building purge operations will continue to be conducted in accordance with existing plant administrative controls, which will ensure the limits of 10 CFR 50 Appendix I are met. The Reactor Building Purge Air Treatment System will continue to provide this function after removal from the Technical Specifications and will continue to be operated, maintained and tested in accordance with approved plant procedures and programs. However, this system does not meet the criteria of 10CFR50.36 for inclusion in the Technical Specifications. Additionally, it is noted that the NRC-approved NUREG-1430, Revision 2, "Standard Technical Specifications Babcock & Wilcox Plants," does not specify requirements for the air treatment portion of this system. There will be no impact to the design basis of the system as described in UFSAR Sections 5.3.3 and 5.6 as a result of this proposed change.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

AmerGen has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   This change will delete the existing Technical Specifications 3.15.2 and 4.12.2 and revise Technical Specification 3.8.9. The proposed change does not impact nor change the physical configuration of any system, structure or component, nor does it change the manner in which any system is operated. Any change to the system design will be evaluated in accordance with the requirements of 10CFR50.59. Failure of the system will neither initiate any type of accident nor increase the severity of the consequences of an accident previously evaluated. Previously approved analyses of the dose consequences of the accidents described in the TMI Unit 1 UFSAR are not affected by the proposed change and dose consequences remain below the limits of 10CFR50.67 without the operation of the Reactor Building Purge Air Treatment System fan and filter components. The Reactor Building Purge Air Treatment System fan and filter components are not required for mitigation of any accident as described in the TMI Unit 1 UFSAR. Reactor Building purge operations will continue to be conducted in accordance with existing plant administrative controls, which will ensure the limits of 10 CFR 50 Appendix I are met.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   This activity will delete sections of the Technical Specifications applicable to the Reactor Building Purge Air Treatment System fan and filter components. The proposed change does not physically alter any system, structure or component. Any change to the system design will be evaluated in accordance with the requirements of 10CFR50.59. The proposed change will not cause the Reactor Building Purge Air Treatment System to operate outside of its existing design basis. There will be no impact to any operational feature of the system or any procedures that control its operation that could result in a new or different failure mode. The design basis of the Reactor Building Purge Air Treatment System as currently described in the TMI Unit 1 UFSAR is not revised.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **Does the proposed change involve a significant reduction in a margin of safety?**

   Response: No.

The deletion of Technical Specification Sections 3.15.2 and 4.12.2 and the revision of Technical Specification 3.8.9 will not impact the operation of the Reactor Building Purge Air Treatment System. The proposed change will not cause the system to be placed in a configuration outside of its design basis. The proposed change will not reduce the margin of safety of any safety related system. Reactor Building purge operations will continue to be conducted in accordance with existing plant administrative controls, which will ensure the limits of 10 CFR 50 Appendix I are met. The system will continue to be operable in accordance with applicable plant operating procedures. The system will also continue to be tested and maintained under periodic operations surveillance and the TMI Unit 1 Preventive Maintenance Program.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, AmerGen concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

8.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

9.0 REFERENCES

a) TMI Unit 1 Technical Specification Change Request No. 249, Letter to NRC dated January 23, 2001
b) TMI Unit 1 License Amendment No. 236, NRC letter dated October 2, 2001.
c) TMI Unit 1 Technical Specification Change Request No. 290, Letter to NRC dated January 29, 2001
d) TMI Unit 1 License Amendment No. 235, NRC letter dated September 19, 2001
e) TMI Unit 1 License Amendment No. 240, NRC letter dated February 8, 2002

ENCLOSURE 2

TMI Unit 1 Technical Specification Change Request No. 317

Markup of Proposed Technical Specification Page Changes

Revised TS Pages

ii
iv
3-45
3-45a
3-62a
3-62b
4-55b
4-55c

CONTROLLED COPY

TABLE OF CONTENTS

Amendment No. ~~59, 72, 78, 97, 98, 119, 122, 136, 149, 167, 182, 196, 211, 216, 234,~~

CONTROLLED COPY

TABLE OF CONTENTS

Amendment No. 11, 28, 30, 41, 47, 53, 72, 78, 95, 97, 119, 122, 129, 137, 146, ~~197~~,

3.8.8 If any of the above specified limiting conditions for fuel loading and refueling are not met, movement of fuel into the reactor core shall cease; action shall be initiated to correct the conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be made.

3.8.9 The reactor building purge ~~system, including the~~ radiation monitors (isolation valves, and associated) which initiate purge isolation, shall be tested and verified to be operable no more than ~~one week~~ 7 days prior to ~~refueling~~ initial fuel ~~operations.~~ movement in the reactor building.

3.8.10 Irradiated fuel shall not be removed from the reactor until the unit has been subcritical for at least 72 hours.

3.8.11 During the handling of irradiated fuel in the Reactor Building at least 23 feet of water shall be maintained above the level of the reactor pressure vessel flange. If the water level is less than 23 feet above the reactor pressure vessel flange, place the fuel assembly(s) being handled into a safe position, then cease fuel handling until the water level has been restored to 23 feet or greater above the reactor pressure vessel flange.

Bases

Detailed written procedures will be available for use by refueling personnel. These procedures, the above specifications, and the design of the fuel handling equipment as described in Section 9.7 of the UFSAR incorporating built-in interlocks and safety features, provide assurance that no incident could occur during the refueling operations that would result in a hazard to public health and safety. If no change is being made in core geometry, one flux monitor is sufficient. This permits maintenance on the instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition. The decay heat removal pump is used to maintain a uniform boron concentration. The shutdown margin indicated in Specification 3.8.4 will keep the core subcritical, even with all control rods withdrawn from the core (Reference 1). The boron concentration will be sufficient to maintain the core $k_{eff} \leq 0.99$ if all the control rods were removed from the core, however only a few control rods will be removed at any one time during fuel shuffling and replacement. The k_{eff} with all rods in the core and with refueling boron concentration is approximately 0.9. Specification 3.8.5 allows the control room operator to inform the reactor building personnel of any impending unsafe condition detected from the main control board indicators during fuel movement.

Per Specification 3.8.6 and 3.8.7, the personnel and emergency air lock doors, and penetrations may be open during movement of irradiated fuel in the containment provided a minimum of one door in each of the air locks, and penetrations are capable of being closed in the event of a fuel handling accident, and the plant is in REFUELING SHUTDOWN or REFUELING OPERATION with at least 23 feet of water above the fuel seated within the reactor pressure vessel. The minimum water level specified is the basis for the accident analysis assumption of a decontamination factor of 200 for the release to the containment atmosphere from the postulated damaged fuel rods located on top of the fuel core seated in the reactor vessel. Should a fuel handling accident occur inside containment, a minimum of one door in each personnel and emergency air lock, and the open penetrations will be closed following an evacuation of containment. Administrative controls will be in place to assure closure of at least one door in each air lock, as well as other open containment penetrations, following a containment evacuation.

Provisions for equivalent isolation methods in Technical Specification 3.8.7 include use of a material (e.g. temporary sealant) that can provide a temporary, atmospheric pressure ventilation barrier for other containment penetrations during fuel movements.

~~The specification requiring testing Reactor Building purge termination is to verify that these components will function as required should a fuel handling accident occur which resulted in the release of significant fission products.~~

Specification 3.8.10 is required as the safety analysis for the fuel handling accident was based on the assumption that the reactor had been shutdown for 72 hours (Reference 2).

REFERENCES

(1) UFSAR, Section 14.2.2.1- "Fuel Handling Accident"

(2) UFSAR, Section 14.2.2.1(2)- "FHA Inside Containment"

Specification 3.8.9 requires testing of the reactor building purge isolation system. This system consists of the four reactor building purge valves and the associated reactor building purge radiation monitor (5). The test verifies that the purge valves will automatically close when they receive initiation signals from the radiation detectors that monitor reactor building purge exhaust. The test is performed no more than 7 days prior to the start of fuel movement in the reactor building to ensure that the monitors, purge valves, and associated interlocks are functioning prior to operations that could result in a fuel handling accident within the reactor building. For conservatism, the Fuel Handling Accident analysis assumes that the four purge valves remain open.

3.15.2 REACTOR BUILDING PURGE AIR TREATMENT SYSTEM

Deleted

Applicability

Applies to the reactor building purge air treatment system and its associated filters.

Objective

To specify minimum availability and efficiency for the reactor building purge air treatment system and its associated filters.

Specification

3.15.2.1 Except as specified in Specification 3.15.2.3 below, the Reactor Building Purge Air Treatment System filter AH-F1 shall be operable as defined by the Specification below at all times when containment integrity is required unless the Reactor Building purge isolation valves are closed.

3.15,2.2 a. The results of the in-place DOP and halogenated hydrocarbon tests at maximum available flows on HEPA filters and charcoal adsorber banks for AH-F1 shall show less than 0.05% DOP penetration and less than 0.05% halogenated hydrocarbon penetration; except that the DOP test will be conducted with prefilters installed.

b. The results of laboratory carbon sample analysis for the reactor building purge system filter carbon shall show greater than or equal to 85% radioactive methyl iodide decontamination efficiency when tested **in accordance with ASTM D3803-1989** at 30°C, 95% R.H.

3.15.2.3 From and after the date that the filter AH-F1 in the reactor building purge system is made or found to be inoperable as defined by Specification 3.15.2.2 above, the Reactor Building purge isolation valves shall be closed until the filter is made operable.

Bases

The Reactor Building Purge Exhaust System (Reference 1) filter AH-F1 while normally used to filter all reactor building exhaust air. It is necessary to demonstrate operability of these filters to assure readiness for service if required to mitigate a fuel handling accident (Reference 2) in the Reactor Building and to assure that 10CFR50 Appendix I limits are met. Reactor Building purging is required to be terminated if the filter is not operable.

CONTROLLED COPY

DELETE THIS PAGE IN ENTIRETY

High efficiency particulate absolute (HEPA) filters are installed before the charcoal absorbers to prevent clogging of the iodine absorbers for all emergency air treatment systems. The charcoal absorbers are installed to reduce the potential release of radioiodine to the environment. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the 10 CFR 100 guidelines for the Fuel Handling Accident which assumes 90% efficiency for inorganic iodines and 70% efficiency for organic iodines.

The flow through AH-F1 can vary from 0 CFM to 50,000 CFM, the maximum purge flow rate During all modes except COLD SHUTDOWN, the purge valves are limited to no more than 30° open (90° being full open). This provides greater assurance of containment isolation dependability per NUREG 0737 Item II.E.4.2 Attachment 1 Item (2)(a). Makeup air is provided between the filter AH-F1 and the fans AH-E7A and B. (See also T.S. 3.6).

In-place testing for penetration and system bypass shall be performed in accordance with ANSI N510-1980. Charcoal samples shall be obtained in accordance with ANSI N509-1980. Any lot of charcoal adsorber which fails the laboratory test criteria shall be replaced with new adsorbent qualified in accordance with ASTM-D3803-1989.

Laboratory testing of charcoal samples will be performed in accordance with the methods prescribed by ASTM D3803-1989. With the specified efficiencies of the HEPA filters and carbon adsorber, the potential consequences of a Fuel Handling Accident Inside Containment are well within the guidelines of 10 CFR Part 100 (Reference 2). The accident analysis assumes the carbon adsorber is 70% efficient in its total radioiodine removal. Therefore, using a Safety Factor of 2 (Reference 3), the acceptance criteria for the laboratory test of carbon adsorber is set at greater than or equal to 85% [(100 – 70) / 2 = 15% penetration].

References

(1) UFSAR Section 5.3.3 - "Reactor Building Purge System Isolation"

(2) UFSAR Section 14.2.2.1 - "Fuel Handling Accident"

(3) NRC Generic Letter 99-02, dated June 3, 1999.

4.12.2 REACTOR BUILDING PURGE AIR TREATMENT SYSTEM

Deleted

Applicability: Applies to the reactor building purge air treatment system and associated components (Reference 1).

Objective: To verify that this system and associated components will be able to perform its design functions.

Specification

4.12.2.1 At least once per refueling interval, it shall be demonstrated that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at system design flow rate (±10%).

4.12.2.2

a. The tests and sample analysis required by Specification 3.15.2.2, shall be performed initially, once per refueling interval, or within 30 days prior to the movement of irradiated fuel in containment and following significant painting, steam, fire, or chemical release in any ventilation zone communicating with the system that could contaminate the HEPA filters or charcoal adsorbers.

b. DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance on the system housing which could affect HEPA frame bypass leakage.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the system housing which could affect the charcoal adsorber bank bypass leakage.

d. The DOP and halogenated hydrocarbon testing shall be performed at the maximum available flow considering physical restrictions, i.e., purge valve position, and gaseous radioactive release criteria.

e. Each refueling, AH-E7A&B shall be shown to operate within ± 5000 cfm of design flow (50,000 cfm) with purge valves fully open.

4.12.2.3 An air distribution test shall be performed on the HEPA filter bank initially and after any maintenance or testing that could affect the air distribution within the system. The air distribution across the HEPA filter bank shall be uniform within ±20%. The test shall be performed at 50,000 cfm (±10%) flow rate with purge valves fully open.

CONTROLLED COPY DELETE PAGE IN ENTIRETY

Bases

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop should be determined at least once every refueling interval to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Tests of the charcoal adsorbers with Halogenated hydrocarbon refrigerant shall be performed in accordance with approved test procedures. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable all adsorbent in the system should be replaced with an adsorbent qualified according to ASTM D3803-1989. Tests of the HEPA filters with DOP aerosol shall also be performed in accordance with approved test procedures. Any HEPA filters found defective should be replaced with filters qualified according to Regulatory Guide 1.52, March 1978.

Fans AH-E7A & B performance verification is necessary to ensure adequate flow to perform the filter surveillance of T.S. 4.12.2.1 and 4.12.2.3 and can only be demonstrated by running both fans simultaneously. This can only be accomplished when purge valves are note limited to 30° open (i.e., cold shutdown).

The reactor building purge exhaust system no longer is relied upon to serve an operating accident mitigating (i.e. LOCA) function. The retest requirement of T.S. 4.12.2.2a has therefore been changed to reflect the same retest requirements as the auxiliary and fuel handling building ventilation system which similarly serves no operating accident mitigating function.

If significant painting, steam, fire, or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign material, the same tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the Vice President-TMI Unit 1.

References

(1) UFSAR, Section 5.6 - "Ventilation and Purge Systems"