

February 8, 2007

Christopher M. Crane
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNITS 1 AND 2 - REVISION OF
EMERGENCY ACTION LEVELS IN RADIOLOGICAL EMERGENCY
RESPONSE PLAN (TAC NOS. MD2862 AND LS2697)

Dear Mr. Crane:

By letter dated August 15, 2006, and supplemented by letters dated December 1, and December 14, 2006, Exelon Generation Company, LLC, and AmerGen Energy Company, LLC, (Exelon/AmerGen), requested prior Nuclear Regulatory Commission (NRC) approval for changes to the emergency action levels (EALs) for the following stations: Braidwood Station, Units 1 and 2; Byron Station, Unit Nos. 1 and 2; Clinton Power Station, Unit No. 1; Dresden Nuclear Station, Units 2 and 3; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Oyster Creek Generating Station; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Station, Units 1 and 2; and Three Mile Island Nuclear Station, Units 1 and 2 (TMI).

Subsequent to Exelon/AmerGen's December 1, 2006, supplement, Exelon/AmerGen informed the staff during a teleconference on December 13, 2006, that they intend to supplement the EAL submittal for TMI. Exelon/AmerGen followed that notification with an e-mail on December 14, 2006, reiterating their intent to supplement the TMI submittal. As a result, the NRC staff completed its review of the proposed changes for all plants except TMI, and documented the results of the review in a letter dated January 17, 2007.

The changes to the EALs support a conversion from an EAL scheme currently based on NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels" to a scheme based on NEI 99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003), in accordance with Regulatory Issue Summary 2003-18, with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels."

As discussed in the enclosed safety evaluation, the Commission concludes that the EAL changes proposed herein meet the standards of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.47(b) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50, and are, therefore, acceptable.

Sincerely,

/RA/

Christopher Gratton, Senior Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-289 and 50-320

Enclosure: Safety Evaluation

cc w/encl: See next page

As discussed in the enclosed safety evaluation, the Commission concludes that the EAL changes proposed herein meet the standards of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.47(b) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50, and are, therefore, acceptable.

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Plant Licensing Branch III-2
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PUBLIC	LPL3-2 R/F	RidsNrrDorlLpl3-2
RidsNrrPMCGratton	RidsNrrLAEWhitt	RidsAcrsAcnwMailCenter
RidsOgcRp	RidsRgn3MailCenter	RidsNrrDorlDpr
RidsNrrPMRKuntz	DJohnson, NSIR	KBanovac, FSME
EWeiss, NSIR	RidsNrrPMVNurses	

ADAMS Accession No.: ML070320124

NRR-106

OFFICE	NRR/LPL3-2/PM	NRR/LPL3-2/LA	NSIR/LRB	NSIR/LRB/BC	NRR/LPL3-2/BC
NAME	CGratton	EWhitt	DJohnson	EWeiss	MMarshall
DATE	2/2/07	2/2/07	2/2/07	2/2/07	2/8/07

OFFICIAL RECORD COPY

Three Mile Island Nuclear Station, Unit 1

cc:

Site Vice President - Three Mile Island Nuclear
Station, Unit 1
AmerGen Energy Company, LLC
P. O. Box 480
Middletown, PA 17057

Senior Vice President - Nuclear Services
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Vice President - Operations, Mid-Atlantic
AmerGen Energy Company, LLC
200 Exelon Way, KSA 3-N
Kennett Square, PA 19348

Vice President - Licensing and Regulatory Affairs
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Chairman
Board of County Commissioners
of Dauphin County
Dauphin County Courthouse
Harrisburg, PA 17120

Chairman
Board of Supervisors
of Londonderry Township
R.D. #1, Geyers Church Road
Middletown, PA 17057

Senior Resident Inspector (TMI-1)
U.S. Nuclear Regulatory Commission
P.O. Box 219
Middletown, PA 17057

Director - Licensing and Regulatory Affairs
AmerGen Energy Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

Director
Bureau of Radiation Protection
Pennsylvania Department of
Environmental Protection
Rachel Carson State Office Building
P.O. Box 8469
Harrisburg, PA 17105-8469

Plant Manager - Three Mile Island Nuclear
Station, Unit 1
AmerGen Energy Company, LLC
P. O. Box 480
Middletown, PA 17057

Regulatory Assurance Manager - Three Mile
Island Nuclear Station, Unit 1
AmerGen Energy Company, LLC
P.O. Box 480
Middletown, PA 17057

Ronald Bellamy, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Michael A. Schoppman
Framatome ANP
Suite 705
1911 North Ft. Myer Drive
Rosslyn, VA 22209

Vice President, General Counsel and Secretary
AmerGen Energy Company, LLC
2301 Market Street, S23-1
Philadelphia, PA 19101

Three Mile Island Nuclear Station, Unit 1

cc:

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
433 Orlando Avenue
State College, PA 16803

Eric Epstein
TMI Alert
4100 Hillsdale Road
Harrisburg, PA 17112

Correspondence Control Desk
AmerGen Energy Company, LLC
P.O. Box 160
Kennett Square, PA 19348

Manager Licensing - Three Mile Island Nuclear Station, Unit 1
Exelon Generation Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

Assistant General Counsel
AmerGen Energy Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO A PROPOSED REVISION TO THE EMERGENCY ACTION LEVELS
THREE MILE ISLAND GENERATING STATION, UNITS 1 AND 2
DOCKET NOS. 50-289 AND 50-320

1.0 INTRODUCTION

By letter dated August 15, 2006 (Reference No. 1), supplemented by letters dated December 1, 2006 (Reference No. 2), and December 14, 2006 (Reference No. 3), Exelon Generation Company, LLC, and AmerGen Energy Company, LLC, (Exelon/AmerGen) requested prior Nuclear Regulatory Commission (NRC) approval for changes to the emergency action levels (EALs) for the following stations: Braidwood Station, Units 1 and 2; Byron Station, Unit Nos. 1 and 2; Clinton Power Station, Unit No. 1; Dresden Nuclear Station, Units 2 and 3; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Oyster Creek Generating Station; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Station, Units 1 and 2; and Three Mile Island Nuclear Station, Units 1 and 2 (TMI).

Subsequent to Exelon/AmerGen's December 1, 2006, supplemental response, Exelon/AmerGen informed the NRC staff during a teleconference on December 13, 2006, that they intended to supplement the TMI submittal. Exelon/AmerGen followed that notification with an e-mail (Reference No. 8) on December 14, 2006, reiterating their intent to supplement the TMI submittal.

The requested changes to the licensees' EALs supports a conversion from an EAL scheme currently based on NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels" (Reference No. 4), to a scheme based on NEI 99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003) (Reference No. 5), in accordance with Regulatory Issue Summary (RIS) 2003-18, with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels" (Reference No. 6).

These changes have been evaluated by Exelon/AmerGen to be an alternate method for complying with the regulations and have been submitted to the NRC for prior approval.

2.0 REGULATORY EVALUATION

The NRC staff reviewed the proposed revision against the following regulations and guidance:

2.1 Regulations

Paragraph (a)(1) to Section 50.47, "Emergency plans," of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 states, in part, that no operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Section 50.47 also establishes

standards that must be met by the onsite and offsite emergency response plans for NRC staff to make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. One of these standards, 50.47(b)(4), stipulates that emergency plans include a standard emergency classification and action level scheme.

Section IV.B to Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50 provides that emergency plans are to include EALs, which are to be used as criteria for determining the need for notification and participation of State and local agencies, and which are to be used for determining when and what type of protective measures should be considered both onsite and offsite to protect health and safety. EALs are to be based on in-plant conditions and instrumentation, and also on onsite and offsite monitoring. Section IV.B of Appendix E provides that initial EALs shall be discussed and agreed on by the applicant and State and local authorities, and be approved by NRC, and reviewed annually thereafter with State and local authorities. In addition, Section IV.B of Appendix E states, in part, that an EAL revision must be approved by the NRC before implementation if it involves: (1) the changing from an EAL scheme based on NUREG-0654/FEMA-REP-1 to a scheme based on NUMARC/NESP-007 or NEI 99-01; (2) the licensee is proposing an alternate method for complying with the regulations; or (3) the EAL revision has been evaluated by licensee as constituting a decrease in effectiveness.

2.2 Guidance

Revision 4 to Regulatory Guide (RG) 1.101 (Reference No. 7), issued in July 2003, endorses the guidance contained in Reference No. 5 as acceptable to the NRC staff as an alternative method to that described in the following guidance for developing EALs required in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4):

- Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980), and
- Nuclear Utilities Management Council (NUMARC) document, entitled NESP-007, "Methodology for Development of Emergency Action Levels" (Revision 2, January 1992).

Reference No. 6 provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this provided recommendations to assist licensees, consistent with Section IV.B to Appendix E of Part 50, in determining whether to seek prior NRC approval of deviations from the new guidance.

3.0 TECHNICAL EVALUATION

Since the proposed revision to the Exelon/AmerGen EALs were evaluated by Exelon/AmerGen to be an alternate method for complying with the regulations, the proposed changes were submitted to the NRC for approval prior to implementation by the licensee.

The licensees currently utilize an EAL scheme based on Reference No. 4. The licensees are converting to an EAL scheme based on Reference No. 5 in accordance with the guidance from Reference No. 6.

The NRC staff has reviewed the application (Reference No. 1), responses to NRC RAIs (Reference No. 2), and the TMI supplement (Reference No. 10). The NRC staff reviewed the proposed EALs against the guidance in Reference No. 5 to determine if the EALs, as proposed, meet the following guidelines:

- (1) Consistency, (i.e., the EALs would lead to similar decisions under similar circumstances at different plants);
- (2) Human engineering and user friendliness;
- (3) Potential for classification upgrade only when there is an increasing threat to public health and safety;
- (4) Ease of upgrading and downgrading;
- (5) Thoroughness in addressing, and disposing of, the issues of completeness and accuracy raised regarding NUREG-0654 Appendix 1;
- (6) Technical completeness for each classification level;
- (7) A logical progression in classification for multiple events; and
- (8) Objective, observable values.

The NRC staff reviewed the proposed EALs against EALs implemented at other plants of a similar design and has determined that the proposed EALs are consistent with EALs implemented at other plants, uses objective and observable values, and is consistent with the intent of Reference No. 5.

The NRC staff has determined that the proposed EALs are worded such that human engineering and user friendliness concerns are addressed.

The NRC staff reviewed the proposed EAL sets, (a group of EALs within a category related to a common concern, i.e., the Unusual Event, Alert, Site Area Emergency, and General Emergency related to a failure of the plant to shutdown via an automatic scram would be considered an EAL set), and has determined that classification upgrades are based upon an increasing threat to public health and safety, can effectively support upgrading and downgrading, follows a logical progression for multiple events, and is in accordance with the intent of Reference No. 5.

The NRC staff reviewed the proposed EALs for technical completeness and accuracy and has determined that the proposed EALs are consistent with Reference No. 5 which was determined to be an acceptable alternative to NUREG-0654 Appendix 1 EALs (Reference No. 7).

4.0 CONCLUSION

The NRC staff performed a review of the proposed changes to the Exelon/AmerGen EALs described in Reference No. 1, as supplemented by References Nos. 2 and 10, and determined them to be consistent with the guidance of Reference No. 5. As such, the proposed EAL changes meet the requirements of 10 CFR 50.47(b) and Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the following is acceptable:

Three Mile Island Generating Station, Units 1 and 2: Attachment 3 to Reference No. 10 (ADAMS Accession No. ML063430106).

5.0 REFERENCES

1. Letter Number RS-06-114 from Exelon/AmerGen to the NRC dated August 15, 2006, "Exelon/AmerGen Implementation of Emergency Action Levels Developed from NEI 99-01." ADAMS Accession No. ML062790096.
2. Letter Number RS-06-170 from Exelon/AmerGen to the NRC dated December 1, 2006, "Exelon/AmerGen Response to Request for Additional Information for Implementation of Emergency Action Levels Developed from NEI 99-01." ADAMS Accession No. ML063450456.
3. Letter Number 2130-06-20439 from Exelon/AmerGen to the NRC dated December 14, 2006, "Exelon/AmerGen Supplement to Submittal to Revise Oyster Creek Emergency Action Levels Developed from NEI 99-01." ADAMS Accession No. ML063540086.
4. Nuclear Utilities Management Council (NUMARC) document, entitled NESP-007, "Methodology for Development of Emergency Action Levels" (Revision 2, January 1992). ADAMS Accession No. ML041120174.
5. NEI 99-01 "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003). ADAMS Accession No. ML041470143.
6. Regulatory Issue Summary 2003-18, with Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels." ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482.
7. Regulatory Guide 1.101, Revision 4, "Emergency Planning and Preparedness for Nuclear Power Reactors." ADAMS Accession No. ML032020276.
8. December 14, 2006, email informing NRC Staff of Exelon/AmerGen's decision to supplement the submittal for TMI at a later date. ADAMS Accession No. ML070120274.
9. Safety Evaluation dated January 17, 2007, "Braidwood Station, Units 1 and 2; Byron Station, Units 1 and 2; Clinton Power Station, Unit No. 1; Dresden Nuclear Power Station, Units 2 and 3; LaSalle County Station, Units 1 and 2; Limerick Generating Station Units 1 and 2; Oyster Creek Nuclear Generating Station; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Power Station, Units 1 and 2; and Three Mile Island Nuclear Station, Units 1 and 2 - Revision of Emergency Action Levels in Radiological Emergency Response Plan." ADAMS Accession No. 070120260.
10. Letter Number 5928-07-20263 from Exelon/AmerGen dated January 12, 2007, "Exelon/AmerGen Supplement of TMI's Submittal to Revise Emergency Action Levels Developed from NEI 99-01." ADAMS Accession No. ML070160638.

Principal Contributor: D. Johnson, NSIR

Date: February 8, 2007