

December 31, 2007

Mr. John S. Keenan  
Senior Vice President and Chief Nuclear Officer  
Pacific Gas and Electric Company  
Diablo Canyon Power Plant  
P.O. Box 770000  
San Francisco, CA 94177-0001

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NOS. 1 AND 2 – CONVERSION OF EMERGENCY ACTION LEVELS BASED ON NUCLEAR ENERGY INSTITUTE'S (NEI) LETTER 99-01, "METHODOLOGY FOR DEVELOPMENT OF EMERGENCY ACTION LEVELS" (TAC NOS. MD3924 AND MD3925)

Dear Mr. Keenan:

By letter dated December 21, 2006, supplemented by letters dated August 31, and December 14, 2007, Pacific Gas and Electric Company (PG&E/the licensee), requested prior Nuclear Regulatory Commission (NRC) approval for changes to the emergency action levels (EALs) for the Diablo Canyon Power Plant, Unit Nos. 1 and 2 (DCPP).

The requested changes to the licensees EALs support a conversion from their current EAL scheme to a scheme based on the Nuclear Energy Institute's (NEI) Letter 99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003), in accordance with Regulatory Issue Summary 2003-18, including Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels." DCPP currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

The NRC staff has completed a technical and regulatory review of the proposed EAL changes and supporting documentation. The NRC staff has concluded that incorporation of the proposed changes does not decrease the effectiveness of the applicable Emergency Plans, and that the plans, as changed, continue to meet the standards of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.47, "Emergency Plans," paragraph (b), and the requirements of Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities."

J. S. Keenan

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The basis for the NRC staff's conclusion is contained in the enclosed safety evaluation. If you have any questions, please contact me 301-415-1445.

Sincerely,

/RA/

Alan Wang, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosure:  
Safety Evaluation

cc w/encls: See next page

J. S. Keenan

- 2 -

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Enclosures:  
Safety Evaluation

cc w/encls: See next page

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**ADAMS Accession Nos.: ML073610403**

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**OFFICIAL RECORD COPY**

Diablo Canyon Power Plant, Units 1 and 2

(August 2007)

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SAFETY EVALUATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO PROPOSED REVISIONS TO THE EMERGENCY ACTION LEVELS  
FOR THE  
DIABLO CANYON POWER PLANT UNIT NOS. 1 AND 2  
DOCKET NOS. 50-275 and 50-323

1.0 INTRODUCTION

By application letter dated December 21, 2006 (Reference 1) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML063620364), as supplemented by letters dated August 31, (Reference 2), and December 14, 2007 (Reference 3) (ADAMS Accession Nos. ML073650199 and ML073540877, respectively), Pacific Gas and Electric Company (PG&E/ the licensee), requested prior U.S. Nuclear Regulatory Commission (NRC) approval for changes to the emergency action levels (EALs) for the Diablo Canyon Power Plant Unit Nos. 1 and 2 (DCPP).

The requested changes to the licensees EALs support a conversion from their current EAL scheme to a scheme based on the Nuclear Energy Institute's (NEI) Letter 99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003) (Reference 4), in accordance with Regulatory Issue Summary 2003-18, including Supplements 1 and 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels (Reference 5)." DCPP currently uses an EAL scheme based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Reference 6)."

2.0 REGULATORY EVALUATION

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

2.1 Regulations

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.47, "Emergency Plans," paragraph (a)(1), states 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, "Assessment Actions," 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: 1) as criteria for determining the need for notification and participation of local and State agencies and 2) 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 that an EAL revision must be approved by the NRC staff 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 1.101, issued in July 2003 (Reference 7), endorses the guidance contained in Reference 4 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).

RIS 2003-18 (Reference 5) provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this RIS provides 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 guidance.

## 3.0 TECHNICAL EVALUATION

The proposed changes were submitted to the NRC for a technical and regulatory review prior to implementation by the licensee, as required under Section IV.B of Appendix E to 10 CFR Part 50.

This evaluation is based on a revision to EALs provided in the application letter and supplemented by PGE's responses to the NRC's requests for additional information.

DCPP currently utilizes an EAL scheme based on NUREG-0654 (Reference 6). The licensee is converting to an EAL scheme based on NEI 99-01 (Reference 4) in accordance with the guidance from RIS 2003-18 (Reference 5).

The NRC staff reviewed the proposed EALs against the guidance in NEI 99-01 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 NEI 99-01. 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. The NRC staff has also determined that the EAL sets can effectively support upgrading and downgrading, follows a logical progression for multiple events, and is in accordance with the intent of NEI 99-01.

The NRC staff reviewed the proposed EALs for technical completeness and accuracy and has determined that the proposed EALs are consistent with NEI 99-01 which was determined to be an acceptable alternative to NUREG-0654, Appendix 1.

#### 4.0 CONCLUSION

The NRC staff performed a technical and regulatory review of the proposed changes to the DCP EALs. The NRC staff has determined that incorporation of the proposed changes do not decrease the effectiveness of the applicable Emergency Plans and the plans, as changed, continue to meet the standards of Section 50.47(b) and the requirements of Appendix E to

10 CFR Part 50. The conclusions of this safety evaluation is specific to the EALs and EAL Technical Basis document as provided in Reference 3. Any future review of EALs against the NRC-approved scheme should only be referenced against the Technical Basis document provided in Reference 3.

The NRC staff has determined, based on the considerations discussed above, that: (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 Commissions regulations, and (3) the proposed emergency plan changes will not be inimical to the common defense and security or to the health and safety of the public. The proposed changes to the DCPPEALs are therefore acceptable to the NRC staff.

## 5.0 REFERENCES

1. Letter from Pacific Gas and Electric Company, to the NRC, dated December 21, 2006, "Approval of Emergency Action Levels (EALs) Conversion to Nuclear Energy Institute (NEI) 99-01, 'Methodology for Development of Emergency Action Levels' Scheme," ADAMS Accession No. ML063620364.
2. Letter from Pacific Gas and Electric Company, to the NRC, dated August 31, 2007, "PG&E Response to NRC Request for Additional Information Regarding the Emergency Action Level Conversion Project."
3. Letter from Pacific Gas and Electric Company, to the NRC, dated December 14, 2007, "PG&E Response to NRC Second Request for Additional Information Regarding the Emergency Action Level Conversion Project," ADAMS Accession No. ML073540877.
4. NEI 99-01, "Methodology for Development of Emergency Action Levels (Revision 4, January 2003)." ADAMS Accession No. ML041470143.
5. 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.
6. NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." ADAMS Accession No. ML040420012.
7. "Emergency Planning and Preparedness for Nuclear Power Reactors, Regulatory Guide 1.101, Revision 4." ADAMS Accession No. ML032020276.

Principal Contributor: Nathan Sanfilippo, NSIR/DPR

Date: