

November 18, 2011

Mr. James R. Becker  
Site Vice President and Station Director  
Diablo Canyon Power Plant  
Mail Code 104/5/502  
P.O. Box 56  
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
MATERIALS LICENSE NO. SNM-2511, AMENDMENT REQUEST NO. 2 –  
SECOND REQUEST FOR ADDITIONAL INFORMATION, PART 1 (TAC NO.  
L24515)

Dear Mr. Becker:

By letter dated January 31, 2011, as supplemented June 8, and July 28, 2011, Pacific Gas and Electric Company (PG&E) submitted an application to the United States Nuclear Regulatory Commission (NRC) to amend Materials License No. SNM-2511 for the Diablo Canyon Independent Spent Fuel Storage Installation.

The NRC staff (staff) has reviewed your application and has determined that additional information is required to complete its detailed technical review. We request that you provide this information by December 12, 2011, to support completion of our evaluation. Inform us at your earliest convenience, but no later than November 30, 2011, if you are not able to provide the information by that date. To assist us in re-scheduling your review, you should include a new proposed submittal date and the reasons for the delay.

This information was discussed with Mr. Larry Pulley of your staff on November 10, 2011. Please reference Docket No. 72-26 and TAC No. L24515 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 492-3325.

Sincerely,

**/RA/**

John Goshen, P.E., Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-26  
TAC No.: L24515

Enclosure: As stated

cc: Service List

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NRC Resident Inspector  
Diablo Canyon Nuclear Power Plant  
c/o U.S. Nuclear Regulatory Commission  
P.O. Box 369  
Avila Beach, CA 93424

Dr. Richard Ferguson, Energy Chair  
Sierra Club California  
1100 11<sup>th</sup> Street, Suite 311  
Sacramento, CA 95814

Diane Curran  
Harmon, Curran, Spielberg, & Eisenberg,  
L.L.P.  
1726 M Street N.W., Suite 600  
Washington, D.C. 20036

Rochelle Becker  
San Luis Obispo Mothers for Peace  
1037 Ritchie Rd.  
Grover Beach, CA 93433

Chairman, San Luis Obispo County  
Board of Supervisors  
County Government Center  
1050 Monterey Avenue, Room 370  
San Luis Obispo, CA 93408

Mr. Truman Burns  
Mr. Robert Kinoshian  
California Public Utilities Commission  
505 Van Ness, Room 4102  
San Francisco, CA 94102

Mr. Steve Hsu  
Radiologic Health Branch  
State Department of Health Services  
P.O. Box 942732  
Sacramento, CA 94327-7320

Diablo Canyon Independent Safety  
Committee  
ATTN: Robert R. Wellington, Esq.  
Legal Counsel  
857 Cass Street, Suite D  
Monterey, CA 93940

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Harris Tower & Pavilion  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Christopher J. Warner, Esq.  
Pacific Gas & Electric Company  
Post Office Box 7442  
San Francisco, CA 94120

Mr. David H. Oatley, Vice President  
Diablo Canyon Operations and  
Plant Manager  
Diablo Canyon Nuclear Power Plant  
P.O. Box 3  
Avila Beach, CA 93424

Telegram-Tribune  
ATTN: Managing Editor  
1321 Johnson Avenue  
P.O. Box 112  
San Luis Obispo, CA 93406

Mr. Ed Bailey, Radiation Program Director  
Radiologic Health Branch  
State Department of Health Services  
P.O. Box 942732 (MS 178)  
Sacramento, CA 94327-7320

Mr. James D. Boyd, Commissioner  
California Energy Commission  
1516 Ninth Street (MS 34)  
Sacramento, CA 95814

Ms. Charlotte Alexander  
Vice President, Special Projects  
Green Car Group  
1241 Johnson Avenue #356  
San Luis Obispo, CA 93401

Ellen Carroll  
Environmental Coordinator  
Department of Planning and Building  
County of San Luis Obispo  
County Government Center, Room 310  
San Luis Obispo, CA 93408

The Honorable Lois Capps  
Member, United States  
House of Representatives  
ATTN: Greg Hass, District Representative  
1411 Marsh Street  
San Luis Obispo, CA 93401

Darcie L. Houck, Staff Counsel  
California Energy Commission  
1516 Ninth Street (MS 14)  
Sacramento, CA 95814-5512

Lorraine Kitman  
P.O. Box 1026  
Grover Beach, CA 93483

County Supervisor Peg Pinard  
County Government Center  
1050 Monterey Avenue  
San Luis Obispo, California 93408

David A. Repka  
Brooke D. Poole  
Winston & Strawn  
1400 L Street N.W.  
Washington, D.C. 20005-3502

James B. Lindholm, Jr. Esq.  
County Counsel for San Luis Obispo County  
County Government Center  
1050 Monterey Avenue, Room 386  
San Luis Obispo, CA 93408

Laurence G. Chaset  
Legal Division  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102-3298

Karla Bittner, Chairman  
Ted Ivarie, Vice-Chair  
Marylou Gooden, Secretary  
Avila Valley Advisory Council  
P.O. Box 65  
Avila Beach, CA 93424

Klaus Schumann  
Mary Jane Adams  
26 Hillcrest Drive  
Paso Robles, CA 93446

Robert K. Temple, Esq.  
2524 N. Maplewood Avenue  
Chicago, IL 60647

John L. Wallace  
General Manager & District Engineer  
Avila Beach Community Services District  
P.O. Box 309  
Avila Beach, CA 93424

Barbara Byron, Nuclear Policy Advisor  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA

Mr. James R. Becker  
Site Vice President and Station Director  
Diablo Canyon Power Plant  
Mail Code 104/5/502  
P.O. Box 56  
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
MATERIALS LICENSE NO. SNM-2511, AMENDMENT REQUEST NO. 2 – SECOND  
REQUEST FOR ADDITIONAL INFORMATION (TAC NO. L24515)

By letter dated January 31, 2011, as supplemented June 8, and July 28, 2011, Pacific Gas and Electric Company (PG&E) submitted an application to the United States Nuclear Regulatory Commission (NRC) to amend Materials License No. SNM-2511 for the Diablo Canyon Independent Spent Fuel Storage Installation.

The NRC staff (staff) has reviewed your application and has determined that additional information is required to complete its detailed technical review. We request that you provide this information by December 12, 2011, to support completion of our evaluation. Inform us at your earliest convenience, but no later than November 30, 2011, if you are not able to provide the information by that date. To assist us in re-scheduling your review, you should include a new proposed submittal date and the reasons for the delay.

This information was discussed with Mr. Larry Pulley of your staff on November 10, 2011. Please reference Docket No. 72-26 and TAC No. L24515 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 492-3325.

Sincerely,

**/RA/**

John Goshen, P.E., Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-26  
TAC No.: L24515

Enclosure: As stated

cc: Service List

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Office	SFST	SFST	SFST	SFST	SFST
NAME	JGoshen	WWheatley	JSolis	MSampson	MWaters
DATE:	11/7/2011	11/16/2011	11/16 /2011	11/ /2011	11/18/2011

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DIABLO CANYON INDEPENDENT SPENT FUEL STORAGE INSTALLATION

DOCKET NO. 72-26

LICENSE AMENDMENT REQUEST NO. 2

SECOND REQUEST FOR ADDITIONAL INFORMATION, PART 1

By letter dated January 31, 2011, as supplemented June 8, July 28, and September 15, 2011, Pacific Gas and Electric Company (PG&E) submitted an application to the United States Nuclear Regulatory Commission (NRC) to amend (LAR-2) Materials License No. SNM-2511 for the Diablo Canyon (DC) Independent Spent Fuel Storage Installation (ISFSI). The NRC staff (staff) has reviewed your application and has determined that additional information is required to complete its detailed technical review.

**6.0 Thermal Evaluation**

6.1A

Clarify if the calculation of the grid convergence index (GCI) described in Appendix F to Holtec Report HI-2104625 for both normal condition of storage and cask transfer facility configuration followed the procedure described in American Society of Mechanical Engineers Verification and Validation 20-2009 (ASME V&V 20-2009), "Standard for Verification and Validation in Computational Fluid Dynamics and Heat Transfer".

The calculation of the GCI provided in HI-2104625 does not use different grids for the entire domain. It focuses only in the annulus region between the Multipurpose Canister (MPC) and the overpack. Since there is fluid-solid interaction inside the MPC and fluid-solid interaction in the annular region, the mesh refinement should consider the entire domain. The grid size for the different meshes is not calculated according to the procedure described in ASME V&V 20-2009. Also when performing grid refinement the criteria described in ASME V&V 20-2009 should be followed.

Per ASME V&V 20-2009, when using the GCI method to estimate the discretization error, the following criteria should be met:

- The solution from the different grids used display monotonic convergence.
- The solution from the different grids used should be in the asymptotic range.

To test for that:

- A minimum of four grids is required to demonstrate that the observed order of accuracy 'p' is constant for a simulation series. In fact, it may require more than four grids to convincingly demonstrate asymptotic response in difficult problems, possibly five or six grid resolutions in cases where the convergence is noisy. (ASME V&V 20-2009).
- The observed order of accuracy 'p' has to be comparable to the expected order of accuracy of the method.
- If order of accuracy 'p' is not consistent, then by engineering practice the factor of safety ( $F_s$ ) should be equal to 3.

Enclosure

This information is necessary to verify compliance with 10 CFR 72.122 and 72.128.

Or

#### 6.1B

Provide a revised thermal calculation justifying that adequate thermal margin is maintained for the HI-2104625 Table B.5.9 Scenario 1 (cask transfer facility (CTF)) configuration without utilizing the GCI approach in HI-2104625.

The GCI approach used in HI-2104625 is currently undergoing detailed staff evaluation, and it appears that it may not conform to current accepted industry practices. The staff has noted that Scenario 1 uses a maximum MPC – 32 heat load of 28.74 kw in the analysis. It is possible that the actual maximum DC site specific heat MPC – 32 heat load could be used versus the theoretical maximum heat load of 28.74 kw for the calculation which may provide significant calculated thermal margin without the use of GCI methodology.

This information is necessary to verify compliance with 10 CFR 72.122 and 72.128.

#### 6.2

Clarify why there are two different temperatures limits for the MPC basket for both normal condition of storage and CTF configuration.

Table B.5.10 of HI-2104625 includes an MPC basket temperature of 385°C while Table B.5.17 gives a value of 510°C. Both configurations are intended to be long term storage and as such the temperature limits should be equal (even though the licensee intends to use the CFT for transferring the MPC to the overpack, the application states that the HI-STORM can be loaded inside the CTF for an indefinite time for the Diablo Canyon design basis maximum heat load of up to 28.74 kW). Therefore, this configuration should not be considered off-normal and should use temperature limits for normal conditions of storage.

This information is necessary to verify compliance with 10 CFR 72.122 and 72.128