



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 12, 2011

LICENSEE: Pacific Gas & Electric Co.
FACILITY: Diablo Canyon Nuclear Power Plant Units 1 and 2
SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY 4, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PACIFIC GAS AND ELECTRIC COMPANY REGARDING THE SEVERE ACCIDENT MITIGATION ANALYSIS FOR THE PROPOSED LICENSE RENEWAL OF DIABLO CANYON NUCLEAR POWER PLANT UNITS 1 AND 2

The U.S. Nuclear Regulatory Commission (NRC or the staff) and Pacific Gas & Electric Company (PG&E) staff held a telephone conference call on January 4, 2011, to allow NRC staff an opportunity to clarify its understanding of several responses PG&E provided in its December 6, 2010 RAI response letter (Agencywide Documents Access and Management System Accession Number (ADAMS) ML103410090). PG&E provided a formal response to this teleconference on February 4, 2011 (ADAMS Accession Number ML110380250).

Enclosure 1 provides a participant list and Enclosure 2 provides a teleconference summary.

The applicant has had an opportunity to review this summary.

Briana Balsam

for

Andrew L. Stuyvenberg, Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
As stated

cc w/encl: Distribution via Listserv

LIST OF PARTICIPANTS
JANUARY 4, 2011

PARTICIPANTS

Dan Gibbons
Terry Grebel
John Pyo
John Macleod
Dave Bidwell
Grant Teagarden
Ray Gallucci
Andrew Stuyvenberg
Bob Schmidt
Steve Short

AFFILIATIONS

Pacific Gas & Electric Company (PG&E)
PG&E
PG&E
ERIN Engineering & Research (ERIN)
ERIN
ERIN
U.S. Nuclear Regulatory Commission (NRC)
NRC
Pacific Northwest National Laboratory (PNNL)
PNNL

SUMMARY OF TELEPHONE CONFERENCE CALL
JANUARY 4, 2011
1:00pm EST

The U.S. Nuclear Regulatory Commission (NRC) staff received Pacific Gas and Electric Company's (PG&E) response to follow-up RAIs on December 8, 2010 (letter dated December 6). After reviewing PG&E's responses, NRC staff requested a conference call to confirm the staff's understanding of the responses before moving forward on the staff's SAMA review. NRC staff provided six informational requests to PG&E via e-mail on December 16, 2010.

The teleconference focused on the December 16 requests. These items are listed below, along with the explanations provided by PG&E during the conference call. All items were resolved during the call, though PG&E will submit to NRC a formal, written version of its response to request number 3.

1. The responses to a number of RAIs state that the DC01B model includes or does certain things or gives certain results. Presumably these statements are also true for the DC01A model since the only difference between the two models is the seismic hazard curve.

PG&E indicated that the only difference between DC01A and DC01B is the seismic hazard curve. The statement is true for both models.

2. The response to RAI 4 (or RAI 1.i) mentions that the DC00 (stage 1) model was modified to take credit for RCS depressurization following loss of charging in the seismic PRA and this resulted in a reduction in total CDF to 5.05E-5 per year. Was this change incorporated in the DCC0 model? The results for DCC0 do not show such a significant decrease in CDF.

PG&E indicated that it addressed this issue in its December 6 RAI response, beginning at the bottom of page 4. Excluding the Cable Spreading Room and Control Room fires reduced the DC00 CDF to 5.26E-5 per year, while taking credit for RCS depressurization following loss of charging accounted for the remainder of the reduction to 5.05E-5 per year. In the DCC0 model results shown on page 5 (total CDF: 5.38E-5), fires are once again included.

3. RAI 8 (or RAI 2.e and 2.d). The RAI response does not support the conclusion that the higher cesium (Cs) release fraction for RC16U than for RC14 "would not be expected to impact the consequences by a significant amount." Consider that the RC16U/RC14 Cs release fraction ratio, derived from information provided in ER Table F.2-8, is 2.9 (4.3E-02/1.5E-02) for the MAAP3 results and 1.7 (8.9E-02/5.1E-02) for the ZISOR results, while the release frequency ratio, derived from information provided in the response to RAI 2.b, is 0.7 (5.98E-07/8.55E-07). The NRC staff performed an analysis that scaled the population dose-risk and OECR for the ST2 release category by the MAAP3 ratio.

ENCLOSURE 2

The NRC staff's analysis showed that SAMA 3, and potentially SAMAs 10 and 18, were potentially cost-beneficial, in addition to the SAMAs previously determined by PG&E to be cost-beneficial. Provide further justification for the conclusion in the RAI 8 response that the difference in the Cs release fractions for RC16U and RC14 would not impact the results of the SAMA analysis.

PG&E will submit a written response to this question to provide the NRC with formal documentation. The following is the NRC staff synopsis of the teleconference discussion.

Diablo Canyon staff indicated that the SAMAs in question are not cost-beneficial, even when analyzed with the RC16U source term. PG&E noted that Table F.2-8 of the ER is a reproduction from the DCPD IPE, and is not SAMA-related. Instead, PG&E used MAAP4.0.7 for the RC16U source term in ST2. PG&E noted that cesium iodide (CsI) is an important contributor with impacts on costs, but costs are not directly proportional to Cs releases. Relying purely on Cs release would, PG&E asserts, overstate the impact of a given release.

The initial issue with RC14 is that, for estimating purposes, using one-third of the source term shown in Table F.2-8 results in an underestimate. PG&E's other option was to calculate the source term using two-thirds of that for RC14, which would result in an overestimate. PG&E noted that using either RC16U or RC14, even with values set at 95%, still results in the cost-benefit balance of the SAMAs in question being negative (not cost-beneficial).

In RC16U, PG&E developed a specific source term to account for a lower pressure core melt. This modified source term changes the cost-benefit analysis for SAMA 3, though it remains, PG&E asserts, non-cost-beneficial. In general, PG&E asserts that the source-term differences have a minimal effect on results. The primary difference is that, due to MACCS modeling assumptions, the higher RC16U source term affects how local populations would respond to the event. Given larger emergency-phase doses, more people would evacuate. This would lower the early-phase dose to population. In the base-case analysis, doses were driven by those received in the emergency phase. In the RC16U case, long-term doses drive the results.

PG&E noted that the CsI impact was a factor of 8 larger under RC16U assumptions (4% release versus 0.5% release).

4. The response to RAI 10 (or RAI 2.j) discusses some mitigation actions called for in the SAMGs. To what extent are the SAMGs incorporated into the DCPD Level 2 model?

PG&E indicated that no SAMG actions are included in Level 2.

5. RAI 11 (or RAI 3.c). SAMAs 5 and 18 are described as identical except that the alternate EDG is seismically qualified in SAMA 18. How does split fraction TD2 differ from TD1 and TDF?

Split fraction TD1 includes random failure of EDG with all external support available. TD2 introduces the unavailability of instrument A power. TDF includes total failure of all supporting systems.

6. RAI 12 (or RAI 3.d). Are AFW seismic failures in the sequence therefore failures or unavailabilities of the AFW water sources?

PG&E noted that, as seismic events are likely to result in a loss of offsite power, the reactor would have to rely on natural circulation for cooling. The volume of the condensate-storage tank (below a non-seismically-qualified nozzle) is insufficient for cooling, so fire-water systems would have to be aligned – by operator actions – with the cooling system. PG&E attempted to account for the fact that operators, in an emergency, may fail to align the fire-water system to the cooling system.

April 12, 2011

LICENSEE: Pacific Gas & Electric Co.

FACILITY: Diablo Canyon Nuclear Power Plant Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY 4, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PACIFIC GAS AND ELECTRIC COMPANY REGARDING THE SEVERE ACCIDENT MITIGATION ANALYSIS FOR THE PROPOSED LICENSE RENEWAL OF DIABLO CANYON NUCLEAR POWER PLANT UNITS 1 AND 2

The U.S. Nuclear Regulatory Commission (NRC or the staff) and Pacific Gas & Electric Company (PG&E) staff held a telephone conference call on January 4, 2011, to allow NRC staff an opportunity to clarify its understanding of several responses PG&E provided in its December 6, 2010 RAI response letter (Agencywide Documents Access and Management System Accession Number (ADAMS) ML103410090). PG&E provided a formal response to this teleconference on February 4, 2011 (ADAMS Accession Number ML110380250).

Enclosure 1 provides a participant list and Enclosure 2 provides a teleconference summary.

The applicant has had an opportunity to review this summary.

/RA/ by Briana A. Balsam for

Andrew L. Stuyvenberg, Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
As stated

cc w/encl: Distribution via Listserv

DISTRIBUTION:
See next page

ADAMS Accession Number: ML110380045

OFFICE	LA:DLR/RPOB*	PM:DLR/RPB2	BC:DLR/RPB2	PM:DLR/RPB2
NAME	SFiguroa	AStuyvenberg	DWrona	AStuyvenberg (BBalsam for)
DATE	02/07/2011	03/21/2011	03/30/2011	04/12/2011

OFFICIAL RECORD COPY

Memorandum to Pacific Gas & Electric Company from A. Stuyvenberg dated April 12, 2011

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY 4, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND PACIFIC GAS AND ELECTRIC COMPANY REGARDING THE SEVERE ACCIDENT MITIGATION ANALYSIS FOR THE PROPOSED LICENSE RENEWAL OF DIABLO CANYON NUCLEAR POWER PLANT UNITS 1 AND 2

DISTRIBUTION:

HARD COPY:

DLR R/F

E-MAIL:

PUBLIC

RidsNrrDir Resource

RidsNrrDirRpb1 Resource

RidsNrrDirRpb2 Resource

RidsNrrDirRerb Resource

RidsNrrDirRpob Resource

RidsOgcMailCenter Resource

DWrona

NFerrer

AStuyvenberg

AWang

MPeck, RIV

GMiller, RIV

NO'Keefe, RIV

SUttal, OGC

LSubin, OGC

MSmith, OGC

ICouret, OPA

VDricks, OPA

LUselding, OPA

JWeil, OCA

WMaier, RIV

RRihm, EDO

EWilliamson, OGC