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

July 25, 2012

LICENSEE: Pacific Gas and Electric Company

FACILITY: Diablo Canyon Power Plant, Unit Nos. 1 and 2

SUBJECT: SUMMARY OF JUNE 28, 2012, MEETING WITH PACIFIC GAS AND ELECTRIC COMPANY TO DISCUSS TECHNICAL SPECIFICATION INSTRUMENTATION AND CONTROL SETPOINT CHANGES AT DIABLO CANYON POWER PLANT (TAC NOS. ME7522, ME7523, ME8517, AND ME8518)

On June 28, 2012, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Pacific Gas and Electric Company (PG&E, the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville, Maryland. The purpose of the meeting was to discuss Technical Specification (TS) instrumentation and control setpoint changes. A list of attendees is provided in Enclosure 1. PG&E's handouts from the meeting are provided in Enclosure 2.

The meeting was broken into two parts with the first part of the meeting discussing the setpoint methodology used to support a license amendment request (LAR) submitted by PG&E on October 26, 2011, for the Digital Replacement of the Process Protection System (PPS) Portion of the Reactor Trip System and Engineered Safety Features Actuation System at Diablo Canyon Power Plant, Unit Nos. 1 and 2 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML113070457). The second part of the meeting included PG&E's plans for submitting a future LAR to implement a TS setpoint control program to allow relocation of the setpoints from the TSs to licensee control in accordance with TS Task Force (TSTF) Change Traveler TSTF-493, "Clarify Application of Setpoint Methodology for LSSS [Limiting Safety System Settings] Functions," Option B.

Highlights and Action Items from the Meeting

- PG&E indicated that the setpoint methodology that it intended to use to support the October 26, 2011, digital replacement LAR was imbedded in WCAP-17504-P, "Westinghouse Generic Setpoint Methodology," February 2012 that was submitted to the NRC by a letter dated February 20, 2012 (ADAMS Accession No. ML12058A448). PG&E requested NRC confirmation that WCAP-17504-P would be reviewed by the staff as part of the October 26, 2011, digital replacement LAR.

- The NRC staff indicated that trying to perform the LAR review in parallel with the WCAP review was extremely problematic. For example, the staff indicated that at the completion of the WCAP review there would most likely be application-specific action items that would have to be addressed by anyone that wanted to reference the WCAP safety evaluation. Therefore, the application-specific action

items could not be addressed until the WCAP review was completed several months into the future. The staff indicated that typically review and approval of topical reports take approximately 18 to 24 months to conclude. Therefore, it is highly likely that including the WCAP within the scope of the LAR approval will delay issuance of the DCPP PPS LAR. Furthermore, accepting license amendment requests referencing unapproved topical reports is not consistent with the agency's licensing process. The staff indicated that as an alternative, PG&E could submit the setpoint methodology applicable to the DCPP PPS LAR on a plant-specific basis, which would allow the staff to better manage the review. PG&E took the following actions as a result of the discussion:

- Consider the staff's feedback on whether a plant-specific submittal for the setpoint methodology better supported PG&E's needs, as opposed to relying on the staff's review of a topical report.

- Consider whether or not to provide a letter to the NRC stating that it intended to use the WCAP-17504-P methodology so that the staff could consider this information as part of its prioritization of topical report reviews.

In addition, PG&E indicated that it would submit on the docket the setpoint calculation summary report and that the setpoint calculations themselves would be made available for NRC review in the form of Westinghouse Calculation Notes at Westinghouse's Rockville, MD offices. The NRC staff indicated that in the past, representative setpoint calculations were placed on the docket to support the staff's safety evaluation. This is required by the NRC's licensing process (LIC-101) if the information within a setpoint calculation is used to make the safety finding and documented within the safety evaluation. The process that was used in the past is the staff asked for a listing of all the setpoint calculations, and then based on the list requested the licensee to formally submit one or two of the calculations as representative samples. The staff explained that the NRC has regulations, procedures, and a records management system designed to protect proprietary information submitted on the docket. PG&E took an action to determine if the staff's suggested approach was problematic and, if it is, to provide this feedback, including the reason for it being problematic, to the staff.

- In the second portion of the meeting, PG&E indicated that it was targeting summer 2013, for the LAR to implement TSTF-493 option B. In response to a PG&E question, the NRC staff stated that it was the staff's expectation that the plant-specific setpoint control program should be submitted with the TSTF-493 Option B LAR. NRC took the following actions as a result of this discussion:

  - Issue the draft guidance that the staff is developing that will provide additional guidance to those utilities that intend to pursue TSTF-493 Option B.

- The NRC's Instrumentation and Controls Branch will work with the Division of Policy and Rulemaking to determine if a pilot program for the use of TSTF-493 Option B is appropriate.

PG&E indicated that it would be interested in being the pilot for the use of TSTF-493 Option B and would be further interested in pursuing a fee waiver, if possible, associated with the review. The NRC staff indicated that it would consider the request by PG&E to be considered as a pilot for TSTF-493 Option B.

Please direct any inquiries to me at 301-415-1132 or at Joseph.Sebrosky@nrc.gov.

Joseph M. Sebrosky, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
1. List of attendees
2. PG&E handouts

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LIST OF ATTENDEES

JUNE 28, 2012, MEETING WITH

PACIFIC GAS AND ELECTRIC COMPANY REGARDING

TECHNICAL SPECIFICATION SETPOINT CHANGES AT

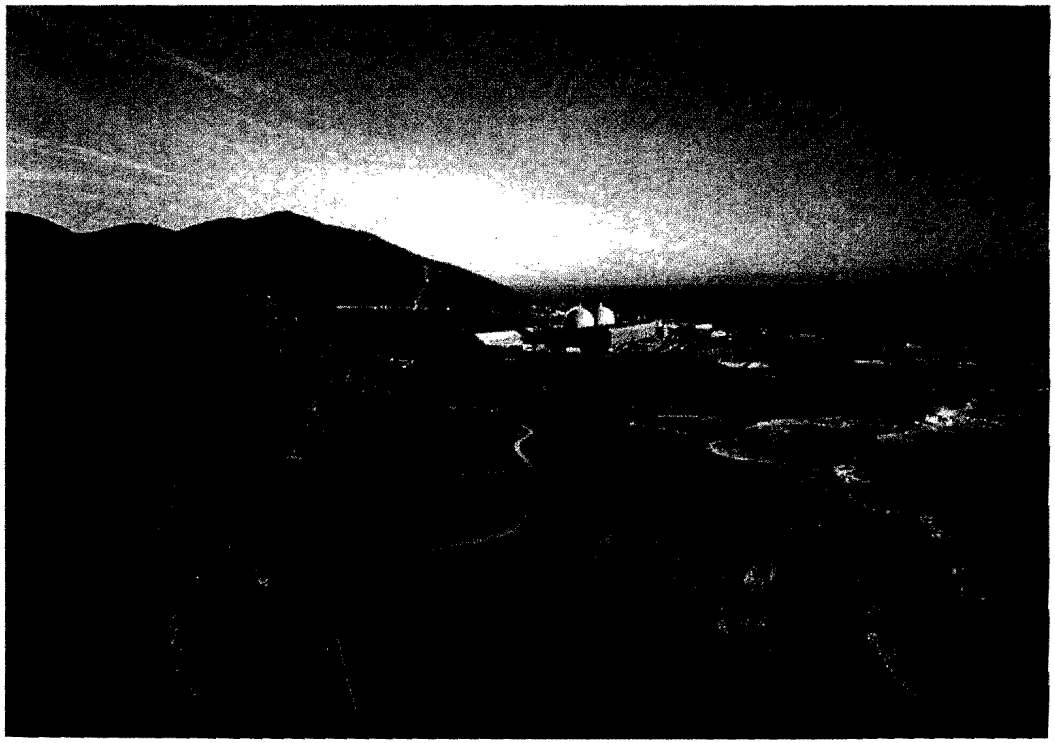
DIABLO CANYON POWER PLANT

DOCKET NOS. 50-273 AND 50-323

NAME	ORGANIZATION
Ken Schrader	Pacific Gas and Electric
Russ Prentice	Pacific Gas and Electric
Robert Washington	Pacific Gas and Electric
Terry Williams	Westinghouse
Rick Tuley	Westinghouse
Ryan Rossman	Westinghouse
Zackary King	Westinghouse
Jim Andrachek	Westinghouse
Dewey Olinski	Westinghouse
John Hefler	Altran
Ted Quinn	Altran
Brian Haynes	Invensys
John Thorp	U.S. Nuclear Regulatory Commission
David Rahn	U.S. Nuclear Regulatory Commission
William Kemper	U.S. Nuclear Regulatory Commission
Kristy Bucholtz	U.S. Nuclear Regulatory Commission
Thomas Burton	U.S. Nuclear Regulatory Commission
Pong Chung	U.S. Nuclear Regulatory Commission
Louis Dumont	U.S. Nuclear Regulatory Commission
Joe Sebrosky	U.S. Nuclear Regulatory Commission
Shiattin Makor	U.S. Nuclear Regulatory Commission
Gordon Clefton	Nuclear Energy Institute
Jerry Voss	Excel Services
Bob Hunter	Hurst Technologies
Bill Sotos	Hurst Technologies
Steve Widem	Wolf Creek Nuclear
Ken Korcz	Babcock and Wilcox MPower

Enclosure 1

DIABLO CANYON POWER PLANT SETPOINTS, DIGITAL REPLACEMENT OF PROCESS PROTECTION SYSTEM AND TSTF-493 Option B
June 28, 2012



Ken Schrader
Robert Washington
Russ Prentice
Pacific Gas & Electric Co.
Avila Beach, CA

C. Rick Tuley
Terry Williams
Jim Andrachek
Ryan Rossman
Westinghouse

John Hefler
Altran
San Francisco, CA

Enclosure 2

PPS Replacement LAR Setpoints

- License Amendment Request (LAR) for Process Protection System (PPS) Replacement submitted October 26, 2011
  - ADAMS Accession No. ML11307A331
- Setpoints for PPS replacement being addressed in two phases
  - Phase One – Setpoint evaluation
  - Phase Two - Setpoint calculations
- Setpoint evaluation and calculations are performed by Westinghouse

PPS Replacement LAR Setpoints

- Setpoint evaluation information for PPS Replacement submitted June 6, 2012
  - Interim Staff Guidance (ISG) 6 Phase 2 documents
  - Enclosure Attachment 15 (proprietary)
  - Enclosure Attachment 16 (nonproprietary)
  - Inputs, equations, and results are consistent with information contained in current Diablo Canyon Setpoints Report, WCAP-11082 Revision 6
    - Initially referenced in 2004 Amendments 178/180
    - Last referenced in 2009 Amendment 208

PPS Replacement Setpoint Evaluation

- Calculate as-found tolerances (AFT) and as-left tolerances (ALT) for applicable process racks, transmitters, and sensors
- Review current plant accident analyses, installed sensors, manufacturer specifications, plant procedures and calculations
- Evaluate as-found minus as-left drift data from recent surveillance results for sample of transmitters

PPS Replacement Setpoint Evaluation

- Scope
  - Reactor Trip System (RTS) and Engineered Safety Feature Actuation System (ESFAS) functions processed by PPS
- Methodology:
  - WCAP-17504-P, Westinghouse Generic Setpoint Methodology, submitted February 20, 2012
    - Total uncertainty determined at two-sided 95% probability and 95% confidence (95/95) level
    - Uncertainty algorithm consistent with ANSI/ISA-67.04.01-2006
    - ISA-RP67.04.02-2010 considered

PPS Replacement Setpoint Evaluation

- Setpoint evaluation uses current Diablo Canyon drift allowances that are expected to be bounding
  - WCAP-14646, Revision 1, Diablo Canyon drift evaluation for 24 month fuel cycle uncertainties (approved in 1998 Amendments 122/120)
    - Confirmed that the RCS Flow and Pressurizer Pressure drift was within the defined sensor calibration accuracy (SCA) and sensor drift (SD)
  - Bounding PPS rack uncertainties from existing design (reference accuracy, temperature affects, drift)
  - PPS replacement design specified to be less than or equal to the current PPS rack uncertainties

PPS Replacement Setpoint Evaluation

- Evaluation submitted June 6, 2012, concludes current PPS related RTS/ESFAS Technical Specification (TS) nominal trip setpoints remain acceptable for PPS replacement
- Uncertainty calculations are being performed
  - Confirm at a 95/95 level, consistent with Regulatory Guide 1.105 Revision 3

PPS Replacement Setpoint Calculations

- Westinghouse Setpoint Methodology as described in WCAP-17504-P
  - Basic algorithm and term identification
  - Definitions and Summary Tables of Inputs and Calculations for:
    - RTS/ESFAS Protection functions
    - ITDP/RTDP Control functions
    - Indication
  - Calibration and drift evaluation
  - Application of Setpoint Methodology

PPS Replacement Setpoint Calculations

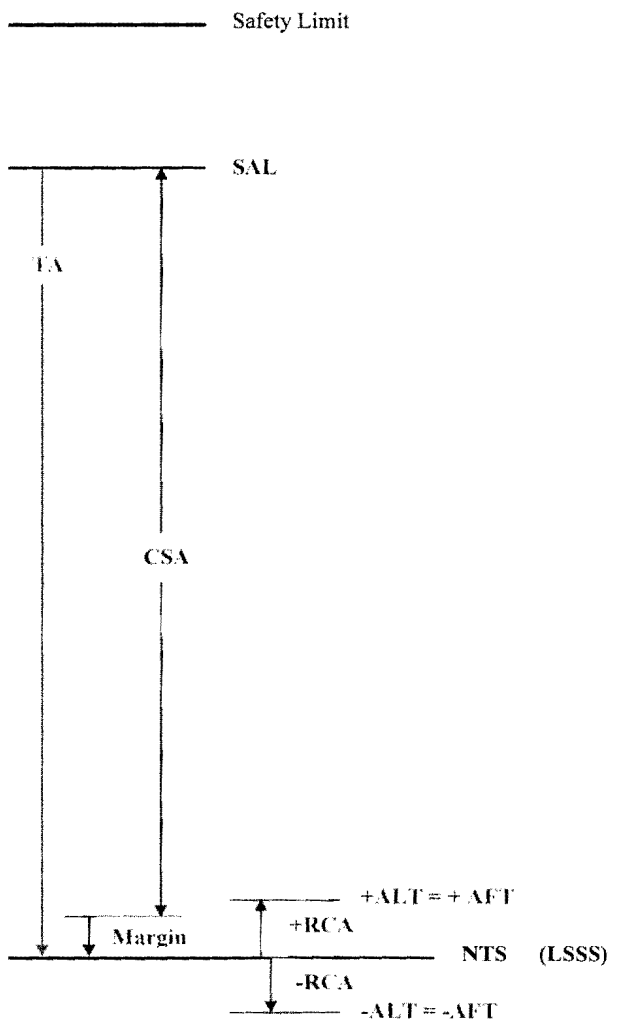
- Basic Algorithm for Protection Functions

$$CSA_{PROT} = \left\{ \sqrt{\begin{array}{l} PMA^2 + PEA^2 + SRA^2 + (SMTE + SD)^2 + (SMTE + SCA)^2 + \\ SPE^2 + STE^2 + (RMTE + RD)^2 + (RMTE + RCA)^2 + RTE^2 \end{array}} \right\} + EA + Bias$$

- Statistical Basis is 95/95 Two-sided
- PG&E and Westinghouse are working with the vendors to determine 95/95 inputs

PPS Replacement Setpoint Calculations

- Setpoint Parameter Relationship Diagram (Increasing Function)
- SAL = Safety Analysis Limit
- TA = Total Allowance
- CSA = Channel Statistical Allowance
- NTS = Nominal Trip Setpoint
- RCA = Rack Calibration Allowance
- ALT = As-left Tolerance
- AFT = As-found Tolerance



PPS Replacement Setpoint Calculations

- As-found Tolerance Limits
  - Transmitters ±AFT = ±SD
    - As-found within ±ALT = Operable
    - As-found within ±AFT = Operable, needs recalibration
    - As-found outside ±AFT = Inoperable, needs recalibration & evaluation
  - Process Racks ±AFT = ±ALT = ±RCA
- As-left Tolerance Limits
  - Transmitters ±ALT = ±SCA
  - Process Racks ±ALT = ±RCA

PPS Replacement Setpoint Calculations

- Calculations consider:
  - Plant accident analyses
  - Plant installed sensors and transmitters
  - PPS replacement components
  - Measurement and Test Equipment
  - Plant surveillance procedures
  - Initial conditions uncertainties in WCAP-11594, Revision 2 (amendments 123 and 121 for 24 month surveillance frequencies)
  - Vendor instrument data

PPS Replacement Setpoint Calculations

- Sensor and rack calibration and drift
  - Process as described in WCAP-17504-P
  - Determination of calibration and drift data at a 95/95 level

PPS Replacement Setpoint Calculations

- Calculation summary report will be submitted to NRC with:
  - Listing of instrument uncertainties
  - CSA calculation
  - SAL, NTS (Protection)
  - TA calculation
  - Margin
  - Transmitter ALT, AFT limits
  - Process Rack ALT, AFT limits

PPS Replacement Setpoint Calculations

- Setpoint calculations will be available for NRC review at Westinghouse White Flint office, as requested

PPS Replacement Setpoint Calculations

- Application of Westinghouse Setpoint Methodology
  - Basic Assumptions
    - Instrument techs drive as left value towards 0 error
    - Process rack calibration and drift data are evaluated
    - Transmitter calibration and drift data are evaluated
  - Operability
    - First confirmation of operability is: Ability to calibrate
    - Second confirmation of operability is: Drift magnitude

PPS Replacement Setpoint Calculations

- PG&E currently controls the as-found and as-left tolerances through existing procedures
- The current surveillance test procedures for the RTS and ESFAS PPS functions require:
  - If the as-found setting is not within desired range, enter into corrective action program
  - The as-left setting shall be within the desired range

PPS Replacement Setpoint Calculations

- PG&E committed to actions to be performed if AFT or ALT are exceeded for PPS related setpoints in PG&E Letter dated June 6, 2012

PPS Replacement Setpoint Calculations

- PG&E is expecting the NRC staff to review Westinghouse WCAP-17504-P as part of the PPS Replacement LAR.
- Please confirm the review will be included as part of the PPS Replacement LAR.

PG&E LAR for TSTF-493 Option B

- PG&E submitted an LAR for SG replacement that included a revision to the TS 3.3.2 ESFAS Feedwater isolation on SG water level-high high (P-14) function
  - Letter dated January 11, 2007
  - As-found and as-left tolerance notes added to P-14 function
- In the LAR, PG&E committed to submit an LAR for TSTF-493 to address the remaining RTS/ESFAS functions
- Amendments 198/199 include commitment

PG&E LAR for TSTF-493 Option B

- PG&E plans to submit LAR to implement TSTF-493, Revision 4, Option B with a Setpoint Control Program (SCP), based on Westinghouse WCAP-17503-P
  - TSTF-493 Option B Model Application
  - Allowable values and nominal trip setpoints will be removed, consistent with TSTF
  - Currently planned for summer 2013 submittal
- SCP will address each of the blocks of the Westinghouse SCP Process Flow Diagram
- Diablo Canyon specific SCP will provide linkage with Westinghouse setpoint methodology assumptions

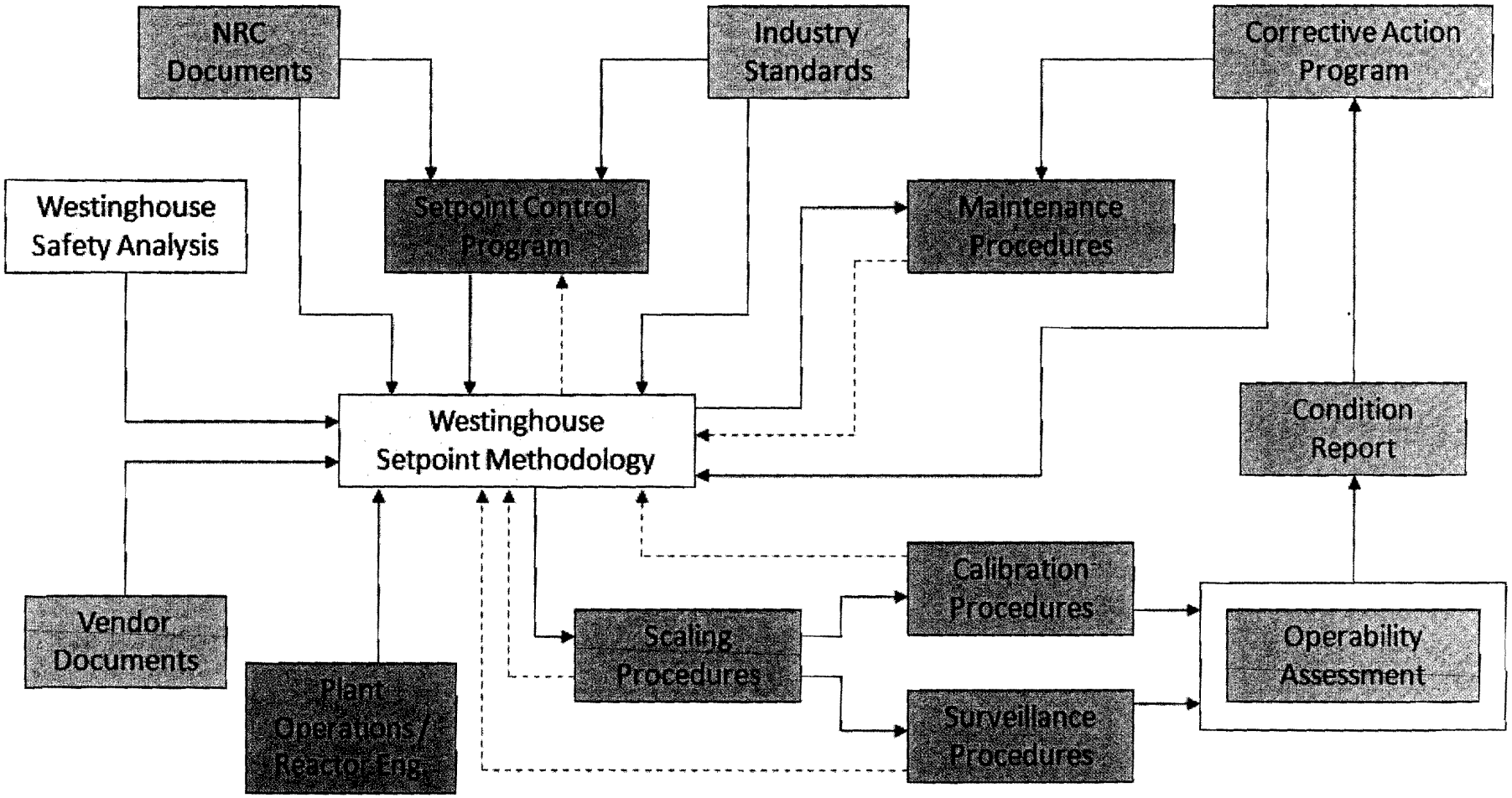
PG&E LAR for TSTF-493 Option B

- Instrumentation items to be included in SCP:
  - TS 3.3.1, RTS
  - TS 3.3.2, ESFAS
  - TS 3.3.5, Loss of power DG start
  - TS 3.3.6, Containment ventilation isolation
  - TS 3.3.7, Control room ventilation actuation
  - TS 3.3.8, Fuel Building ventilation actuation

PG&E LAR for TSTF-493 Option B

- SCP provides comprehensive controls of critical instrumentation design input parameters so plant remains within design and safety analysis assumptions

PG&E LAR for TSTF-493 Option B



PG&E LAR for TSTF-493 Option B

- NRC documents to be evaluated
  - RG 1.105 Rev. 3
  - RG 1.97
  - BTP 7-12 Rev. 5
  - GL 91-04
  - RIS 2006 -17

PG&E LAR for TSTF-493 Option B

- Industry documents to be evaluated
  - ISA Documents
  - IEEE Standards
  - TSTF-493 Rev. 4

PG&E LAR for TSTF-493 Option B

- Examples of Vendor documents to be evaluated:
  - Cameron/Barton 763A GP Transmitter User Manual (9A-C10861, Rev. 03, 7/10)
  - Ultra/Weed RTD Installation/Instruction/Operation Manual (DWG 3017-307485-003, Rev. 3, 9/89)
  - Rosemount 1153D/1154 Transmitter Reference Manual (00809-0100-4388/4514, Rev. BA, 1/08)
  - Rosemount 1154 H Transmitter Reference Manual (00809-0100-4631, Rev. BA, 4/07)
  - Fluke 8842A Multimeter User Manual (879309, Rev. 3, 7/96)

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents to be addressed:
  - Setpoint Control Program
    - Setpoint Control, CF6
    - Setpoint Control Program, CF6.ID1
    - Instrument Channel Uncertainty and Setpoint Methodology, CF6.NE1
    - Assessment of Industry Operating Experience, OM4.ID3

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Scaling Procedures/Calculations
    - I&C Scaling Calculation Standard Practices, CF3.DC6
    - Bases Documents for Maintenance Organization Procedures, CF3.DC5
  - Calibration Procedures
    - Test Control, AD13
    - Conduct of Plant and Equipment Tests, AD13.ID1
    - Calibration of Measuring and Test Equipment, MA2.DC1

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Surveillance Procedures
    - Test Control, AD13
    - Conduct of Plant and Equipment Tests, AD13.ID1
    - Drift Monitoring Program for 24-Month Fuel Cycle, CF6.ID3
    - Instrument Channel Uncertainty and Setpoint Methodology, CF6.NE1

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Corrective Action Program
    - Setpoint Control Program, CF6.ID1
    - Conduct of Plant and Equipment Tests, AD13.ID1
    - Performance Monitoring Equipment Calibration and Usage Control, MA2.ID2
    - 10 CFR 21 Reportability Review Process, OM7.ID11
    - Operability Determination, OM7.ID12

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Maintenance Procedures
    - Maintenance Organization Procedure Use, AD7.DC9
    - Conduct of Plant and Equipment Tests, AD13.ID1
    - Bases Documents for Maintenance Organization Procedures, CF3.DC5
    - Conduct of Maintenance, MA1.DC54

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Change Control Process
    - Modification Control, CF4
    - Modification Request and Authorization, CF4.ID1
    - Modification Implementation, CF4.ID3
    - Design Control, CF3
    - Design Change Development, CF3.ID9
    - Replacement Part Evaluation, CF3.ID13

PG&E LAR for TSTF-493 Option B

- Examples of Diablo Canyon specific documents (continued):
  - Administrative Controls
    - Development of Performance Monitoring Equipment Channel Uncertainty Calculations, AWP E-001
    - Engineering Services Post Earthquake Inspection Guidelines, AWP E-019
    - Earthquake, CP M-4
  - Diablo Canyon Safety Analyses
    - Design Calculations, CF3.ID4

PG&E LAR for TSTF-493 Option B

- PG&E is expecting the NRC staff to review WCAP-17503-P (SCP) because it is linked to WCAP-17504-P (Methodology).
- Please confirm the WCAP-17503-P review will be included as part of the PPS replacement LAR.

PG&E LAR for TSTF-493 Option B

- Does the plant specific SCP need to be submitted with the TSTF-493 Option B LAR?

- The NRC's Instrumentation and Controls Branch will work with the Division of Policy and Rulemaking to determine if a pilot program for the use of TSTF-493 Option B is appropriate.

PG&E indicated that it would be interested in being the pilot for the use of TSTF-493 Option B and would be further interested in pursuing a fee waiver, if possible, associated with the review. The NRC staff indicated that it would consider the request by PG&E to be considered as a pilot for TSTF-493 Option B.

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/RA/

Joseph M. Sebrosky, Senior Project Manager
Plant Licensing Branch IV
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SAchen, RIV
SKennedy, EDO RIV
DRahn, NRR/DE/EICB
JThorp, NRR/DE/EICB
KBucholtz, NRR/DSS/STSB

ADAMS Accession Nos. Meeting Notice ML121350037; Meeting Summary ML12193A141

OFFICE	DORL/LPL4/PM	DORL/LPL4/LA	NRR/DE/EICB	DORL/LPL4/BC	DORL/LPL4/PM
NAME	JSebrosky	JBurkhardt	DRahn	MMarkley	JSebrosky
DATE	7/24/12	7/23/12	7/24/12	7/25/12	7/25/12

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