



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

November 26, 2018

Mr. James M. Welsch
Vice President, Nuclear Generation
and Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 56
Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – NRC TRIENNIAL FIRE
PROTECTION INSPECTION REPORT 05000275/2018007
AND 05000323/2018007

Dear Mr. Welsch:

On November 1, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant, Units 1 and 2. The NRC inspectors discussed the results of this inspection with Mr. J. Nimick, Senior Director, Nuclear Services, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Gregory E. Werner, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos. 50-275 and 50-323
License Nos. DPR-80 and DPR-82

Enclosure:
Inspection Report 05000275/2018007 and
05000323/2018007

cc: Electronic Distribution to Diablo Canyon Power Plant

**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000275, 05000323

License Numbers: DPR-80, DPR-82

Report Number: 05000275/2018007 and 05000323/2018007

Enterprise Identifier: I-2018-007-0004

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Power Plant, Units 1 and 2

Location: Avila Beach, California

Inspection Dates: October 15, 2018, to November 1, 2018

Inspectors: S. Graves, Senior Reactor Inspector (Team Lead)
C. Bickett, Senior Reactor Inspector, Region I
B. Correll, Reactor Inspector
N. Okonkwo, Reactor Inspector

Accompanied: A. Athar, Reactor Inspector

Approved By: G. Werner
Chief, Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a fire protection (NFPA 805 - Triennial) inspection at Diablo Canyon Power Plant, Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified during the inspection.

INSPECTION SCOPE

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>.

Samples were declared complete when the IPs requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.05XT - Fire Protection - NFPA 805 (Triennial)

The inspectors evaluated the following from October 15, 2018, to November 1, 2018.

Fire Protection Inspection Requirements (6 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas and/or fire zones, including analyzed electrical circuits:

<u>Fire Area</u>	<u>Description</u>
7-A	Unit 1, Cable Spreading Room
8-H	Unit 2, Solid State Protection System Room
10	Unit 1, 12 kV Switchgear Room
TB-10	Unit 2, 4 kV Switchgear Room and Cable Spreading Room, F Bus
TB-11	Unit 2, 4 kV Switchgear Room and Cable Spreading Room, G Bus
TB-12	Unit 2, 4 kV Switchgear Room and Cable Spreading Room, H Bus

B.5.b Inspection Activities (1 Sample)

The inspectors evaluated feasibility of the following B.5.b Mitigating Strategy:

EDMG EDG-8, Manual Operations to Control Steam Generator Water Level, Revision 2

INSPECTION RESULTS

The NRC inspectors did not identify any finding or violation of more than minor significance.

EXIT MEETINGS AND DEBRIEFS

On November 1, 2018, the inspectors presented the triennial fire protection inspection results to Mr. J. Nimick, Senior Director, Nuclear Services, and other members of the licensee staff. The inspectors verified no proprietary information was retained or documented in this report.

DOCUMENTS REVIEWED

71111.05XT – Fire Protection - NFPA 805 (Triennial)

Condition Reports

50038548	50998600*	51001023*	51000728*	51002303*
50522666	50998604*	50854730	51001014*	50895475
50523380	51001171*	51001107*	51000841*	51001022*
50523803	51001268*	51001025*	50854735	51000729*
50524391	51001209*	51000499*	51001020*	51000923*
50998535*	51001024*	51002888*	51001015*	50984012
50982622	51002778*	51002853*	51001036*	A0732932
50305948	50294777	51000823	51000922	51003054
51003070	51003053			

*Issued as a result of inspection activities.

Work Orders

60112165	64147217	64200604	64200605	64200688	64200937	64202044
64148604	64182606	64206262	64206280	64206281	64206282	64206283
64183007	64206501	64188852	64190882	64191393	64200406	64200600
64185948	64200601	64206504	64207187	68040626	64204770	64206498
64187362	64205487	64148946	64149653	64169440	64174713	64178133
64192020	64200603	64003982	64019052	64035540	64036282	64136705
64196877	64160966	64133861	64154464	64195891	64133937	64151706
64160967	64133229	64133228	64121838	64121837		

Procedures

Number	Title	Revision
335-DC	Emergency Lighting and Communications	13
AD13.DC6	Fire Protection System Performance Based Surveillance Program	5A
CF3.ID9	Design Change Development	37
CF3.ID9	Design Change Development	54
CF3.ID9	Design Change Development	56
CF6.ID1	Setpoint Control Program	8
CP M6	Site Fire Response	37
EDMG EDCG-1	ERO Guidance for Extensive Plant Damage Mitigation	1A
EDMG EDG-14	EDMG Equipment Annual Inventory	4
EDMG EDG-8	Manual Operations to Control Steam Generator Water Level	2
EDMG EDMG-1	Extensive Damage Mitigation Guideline	4D

Procedures Number	Title	Revision
MP E-57.2A	Wire and Cable Pulling	8
MP E-62.5A	Maintenance of Cutler Hammer 12 kV AM-VR Vacuum Circuit Breakers	07
MP E-63.3A	Instruction for Assembly and Insulation of 4 and 12 kV Bus	8
MP E-63.3B	Potential Transformer Drawer Maintenance	13
MP E-63.3C-SHH	Maintenance of 4 kV Switchgear - Bus H	0
MP E-63.3D-SHH	Bus Connection Resistance Test – 4 KV Bus H	0
MP I-18-IFD	Incipient Fire Detection System Maintenance	1
MP I-18-IFDPRO	Incipient Fire Detection System Portable Detector Routine Maintenance	0
OM10.ID6	Equipment Important to Emergency Response (EITER)	7
OM3.ID7	Portable Radio and Cellular Phone Use	6
OM5	Quality Assurance Program	12
OM8	Fire Protection Program	7
OM8	Fire Protection Program	8
OM8.ID4	Control of Flammable and Combustible Materials	28
OP A-4A:I	Pressurizer – Make Available	32
OP AP-26	Loss of Offsite Power	21
OP AP-8A	Control Room Inaccessibility - Establishing Hot Standby	45
OP AP-8A	Control Room Inaccessibility – Establishing Hot Standby	46
OP K-2C	Fire Protection Network Operation	47
OP1.DC10	Conduct of Operations	54
OP1.ID2	Time Critical Operator Action	10
OP-K9	Instruction for Operation of the Diablo Canyon Power Plant Radio System	16
STP I-18-IFD.A	Incipient Fire Detection System Operability and Channel Functional Test	4

Procedures Number	Title	Revision
STP I-29	Emergency Signals and Communications Systems Functional Test	49A
STP M-70.SWG	Inspection of ECG Swing Type Doors	6
Design Documents Number	Title	Revision or Date
DCL-13-065	NFPA 805 Transition Report	June 26, 2013
Design Criteria Memorandum S-18	Fire Protection System	25
Drawings Number	Title	Revision
DSK-5000055903, Sh. 1	Site Radio Interconnect Diagram	0
DSK-5000055903, Sh. 2	Site Radio Interconnect Diagram	0
57563	Cable Tray and Conduit Layout, Plan Below Elevation 119'-0" Area "A"	35
57578, Sh. 1	Electrical Cable Tray and Conduit Layout, Plan below Elevation 107'-0" Area "A"	64
57579	Electrical Cable Tray and Conduit Layout, Turbine Generator Building Area "A" Section	36
57597	Embedded Conduit Layout, El. 85'-0" Area "FW"-GW	12
57606	Electrical Cable Tray and Conduit Layout Section "E-E" and "F-F" Area "H"	33
57612, Sh. 1	Electrical Conduit Layout Plan, Below Elevation 140 – 0", Area "H"	42
57658	Electrical Conduit Layout, Area "P" Outdoors	14
066689	Penetration Seal Typical Design Details	2
066689, Sh. 5 & 6	Fire Seal Design Detail F-1	2
102008, Sh. 4	Chemical and Volume Control	115
102014, Sh. 5	Component Cooling Water	59
102019, Sh. 6A	Liquid Radwaste System	82
106703, Sh. 3	Unit 1, Auxiliary Feedwater System	81

Drawings Number	Title	Revision
106718, Sh. 4	Firewater Yard Loop	185
106718, Sh. 2 & 3	Firewater Yard Loop	183
106718, Sh. 7	Unit 1 and Unit 2 Turbine Building Hose Reel Stations	180
106718, Sh. 10	Unit 1 and Unit 2 Auxiliary Building Hose Reel Stations	181
111805, Sh. 16	Fire Department – Radiological Control Area and H Block Elevation 140'	1
111805, Sh. 17	Fire Department – Radiological Control Area and H Block Elevation 140' Unit 1 and Common	1
111805, Sh. 26	Fire Department – H Block Elevation 128', 154', and 164'	26
111805, Sh. 27	Fire Department – H Block Elevation 128', 154', and 164'	1
111805, Sh. 49	Fire Department – Turbine Building Elevation 85'	1
111805, Sh. 50	Fire Department – Turbine Building Elevation 85' and 76' Unit 1	1
111805, Sh. 51	Fire Department – Turbine Building Elevation 76'	1
111805, Sh. 63	Fire Protection Drawing - Turbine Building Elevation 104'	1
111805, Sh. 64	Fire Protection Drawing - Turbine Building Elevation 104' U2	1
111906, Sh. 3	Turbine Building Elevation 76'	5
111906, Sh. 6	Turbine Building Elevation 85'	10
111906, Sh. 12	Turbine Building Elevation 104'	7
111906, Sh. 13	Turbine Building Elevation 119'	9
111906, Sh. 23	Auxiliary Building Elevation 140'	13
111906, Sh. 25	Auxiliary Building Elevations 128', 154', 164', and 174'	8
334336	Thermal Electric Design Standard, Contact Protector/Transient Suppressor for Solenoid Valves and Relay Coils	4
345883, Sh. 1	TCOM System Diagram, Calif. Dept. of Forestry/San Luis Obispo County Fire Dept. – Radio System	7
437513, Sh. 1	Diagram of Connections, Hot Shutdown Control Panel	26

Drawings Number	Title	Revision
437518, Sh. 1	Single Line Diagram for Station Auxiliaries	41
437533	Electrical Single Line Meter and Relay Diagram, 4160 Volt System	45
437579, Sh. 1	Schematic Diagram 4 kV Diesel Generator Control No. 11 and 12	44
437608	Schematic Diagram Component Cooling System Motor Operated Valves	20
437667, Sh. 1	Schematic Diagram 4 kV Diesel Generator Control No. 13	46
437683, Sh. 1	Schematic Diagram Chemical and Volume Control System Solenoid Valves	24
437819, Sh. 1	Electrical Diagram of Connection, Diesel Generator, and Associated Equipment	27
437902, Sh. 1	Diagram and Panel Schedule Lighting Distribution	88
437920, Sh. 1	Diagram of Connections, Penetration 8E	9
441220, Sh. 1	Single Line Diagram for Station Auxiliaries	30
441493, Sh. 1	Diagram and Panel Schedule Lighting Distribution	81
480281, Sh. 1	Diagram of Connections, Incipient Fire Detection	01
480282, Sh. 1	Diagram of Connections, Incipient Fire Detection	01
480284, Sh. 1	Diagram of Connections, Incipient Fire Detection	01
480285, Sh. 1	Diagram of Connections, Incipient Fire Detection	01
480289, Sh. 1	Diagram of Connections, Incipient Fire Detection	01
501452	Embedded Conduit Layout, EL 140-0" Area "H"	3
502110	Electrical Single Line Diagram, 500/230/25/12/4.16 kV Systems	21
663089, Sh. 217	Incipient EFID01 Configuration	1
663339, Sh. 1	Arrangement, Outdoor Bus Duct	10
663339, Sh. 10	Arrangement layout Indoor/Outdoor Bus Duct Arrangement 5 and 15 kV	6
663339, Sh. 11	Electrical Indoor- Outdoor Bus Duct Arrangement	7

Drawings Number	Title	Revision
663339, Sh. 15	Electrical Installation Detail for Indoor and Outdoor Bus Duct	7

Miscellaneous Documents Number	Title	Revision or Date
	CAL FIRE 2018 Operating Plan for On-Site Fire and Rescue Response at Diablo Canyon Power Plant	March 7, 2018
	Diablo Canyon Power Plant, Units 1 and 2 - Issuance of Amendments Regarding Transition to a Risk-Informed, Performance-Based Fire Protection Program in accordance with 10 CFR 50.48(c)	April 14, 2016
50953336	2018 Fire Protection Pre-Triennial Self-Assessment Report	June 18, 2018
DCL 13-065	License Amendment Request to Adopt NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition)	June 26, 2013
ECG 18.0	Equipment Control Guidelines: Fire Protection	10
Lesson EDCG-1	B.5.b. - ERO Guidance for Extensive Plant Damage Mitigation	July 6, 2011
Lesson FTFD009	Extensive Plant Mitigation Guidelines	November 29, 2017
Lesson LEDMG	EDMG - B.5.b. Initial Response and Implementing Guidelines	February 23, 2018
Lesson R136C2	Extensive Damage Mitigation Guidelines	March 15, 2014
LPA-8	OP AP-8 Control Room Inaccessibility Reactor Operator, Senior Reactor Operator, and Shift Technical Advisor	16A
NFPA 12A	Halon 1301 Fire Extinguishing Systems	1992
NFPA 72	National Fire Alarm and Signaling Code	2016
NFPA 76	Standard for the Fire Protection of Telecommunications Facilities	2016
NFPA 805	Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants	2001

Miscellaneous Documents Number	Title	Revision or Date
NRC FAQ 08-0046	Closure of National Fire Protection Association 805 Frequently Asked Question 08-0046 Incipient Fire Detection Systems	November 23, 2009
R176C8	Electrical Task Training Non-Licensed Operator	0
R181C6	Hot Shutdown Panel/AP-8 Continuing Training for Licensed Personnel	0
TR-1006756	Fire Protection Equipment Surveillance Optimization and Maintenance Guide	July 2003

Vendor Documents Number	Title	Revision or Date
P1890-002-004	Fire Protection Code Conformance Review	1
030023-RPT-01	Review of Monitoring Criteria for HSS Nuclear Safety Capability Assessment (NSCA) Components	0
663089-244-2	Cirrus Pro Aspirating Fire Detector Engineers Manual	June 1, 2017
663089-245-2	Cirrus Pro Aspirating Fire Detector User Manual and Responsibilities	May 9, 2017
663082	Instruction Book for Switchgear Supplied by Alco Products Inc., Engine Controls and Gauge Panels	3
663332-80	Instruction and Renewal Part for Metal Clad Switchgear Types M-26 and M-36	27

Modifications Number	Title	Revision or Date
DCP 1000000078 Revision 1	Diablo Canyon Power Plant, Unit 1 Integrated Head Assembly (IHA)	
DCP 1000025244	Unit 1, Incipient Fire Detection System	
DCP 1000025255	Unit 2, Incipient Fire Detection System	

Engineering Reports Number	Title	Revision or Date
FPEE-075	1 Hour Barrier in SSPS Rooms	September 7, 2017
FPEE-133	Seismic/Construction Gaps in the 12 kV Switchgear Rooms	November 20, 2017
FPEE-147	Evaluation of Unistrut Configurations in 128' Cable Spreading Room	December 13, 2017

Engineering Reports Number	Title	Revision or Date
FPEE-147A	Evaluation of Unistrut Configurations in 128' Cable Spreading Room	December 13, 2017
FPEE-170	NFPA 805 Internal Conduit Seal Design Criteria Equivalency	August 16, 2017
FPEE 80	Fire Dampers Installed at Variance with Manufacturer's Instructions	0
FPEE 138	Drain Holes in Pyrocrete Raceway Fire Barrier Panels	0
Calculations Number	Title	Revision
M-1023	Verify Cable Spreading Room CO ₂ Retention Time	0
M-997	(Appendix 2.1) Qualification of Penetration Seal Typical F-1	1
M-944	10 CFR 50, Appendix R Alternate Shutdown Methodology – Time and Manpower Study/Safe Shutdown System Considerations	7
9000032684	Emergency Lighting and Communications	13
9000041048	Associated CKT Analysis – Fire Protection	02
9000041466	Nuclear Safety Capability Assessment (NSCA)	004/00
9000041468	Recovery Action Feasibility Assessment (RAFA)	004/00
9000041689	NFPA 805 Design Basis Document	00

DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000275/2018007 AND 05000323/2018007 – NOVEMBER 26, 2018

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Electronic Distribution for Diablo Canyon Power Plant

ADAMS ACCESSION NUMBER: ML18331A095

SUNSI Review: ADAMS: Non-Publicly Available Non-Sensitive Keyword: NRC-002

By: STG Yes No Publicly Available Sensitive

OFFICE	SRI:EB2	RI:EB2	RI:EB2	SRI:RI/EB2	BC:EB2	BC:DRPA	BC:EB2
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