

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8404200325 DOC. DATE: 84/04/17 NOTARIZED: NO DOCKET #
 FACIL: 50-275 Diablo Canyon Nuclear Power Plant, Unit 1, Pacific Gas 05000275
 AUTH. NAME AUTHOR AFFILIATION
 SCHUYLER, J. O. Pacific Gas & Electric Co.
 RECIP. NAME RECIPIENT AFFILIATION
 EISENHUT, D. G. Division of Licensing

SUBJECT: Requests change of 831104 commitment to reflect recent study finding that lighting levels less than one foot-candle at floor acceptable for emergency lighting per Section III.J of App R. Addl info encl.

DISTRIBUTION CODE: B002S COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 3
 TITLE: Licensing Submittal: Fire Protection

NOTES: J. Hanchett 1cy PDR Documents.

05000275

	RECIPIENT ID CODE/NAME		COPIES L TTR ENCL		RECIPIENT ID CODE/NAME		COPIES L TTR ENCL
	NRR LB3 BC		1 1		SCHIERLING, H 01		1 1
INTERNAL:	ELD/HDS2		1 0		IE FILE 07		1 1
	NRR/DE/CEB	06	2 2		NRR/DSI/ASB		1 1
	<u>REG FILE</u>	04	1 1		RGNS		1 1
EXTERNAL:	ACRS	10	6 6		LPDR 03		2 2
	NRC PDR	02	1 1		NSIC 05		1 1
	NTIS		1 1				
NOTES:			1 1				

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
RESEARCH REPORT NO. 100
BY
J. H. GOLDSTEIN AND
R. F. FIESER

THE PREPARATION OF
POLYMERIZATION PRODUCTS
FROM
ACRYLONITRILE
AND
METHACRYLONITRILE

RECEIVED AT THE
LIBRARY OF THE UNIVERSITY OF CHICAGO
MAY 15 1945

1945

RESEARCH REPORT NO. 100

Run	Temp. (°C)	Time (hr)	Yield (%)	Viscosity (dl/g)	Notes
1	50	2	100	0.5	Control
2	50	4	100	0.5	Control
3	50	8	100	0.5	Control
4	50	16	100	0.5	Control
5	50	32	100	0.5	Control
6	50	64	100	0.5	Control
7	50	128	100	0.5	Control
8	50	256	100	0.5	Control
9	50	512	100	0.5	Control
10	50	1024	100	0.5	Control
11	50	2048	100	0.5	Control
12	50	4096	100	0.5	Control
13	50	8192	100	0.5	Control
14	50	16384	100	0.5	Control
15	50	32768	100	0.5	Control
16	50	65536	100	0.5	Control
17	50	131072	100	0.5	Control
18	50	262144	100	0.5	Control
19	50	524288	100	0.5	Control
20	50	1048576	100	0.5	Control
21	50	2097152	100	0.5	Control
22	50	4194304	100	0.5	Control
23	50	8388608	100	0.5	Control
24	50	16777216	100	0.5	Control
25	50	33554432	100	0.5	Control
26	50	67108864	100	0.5	Control
27	50	134217728	100	0.5	Control
28	50	268435456	100	0.5	Control
29	50	536870912	100	0.5	Control
30	50	1073741824	100	0.5	Control
31	50	2147483648	100	0.5	Control
32	50	4294967296	100	0.5	Control
33	50	8589934592	100	0.5	Control
34	50	17179869184	100	0.5	Control
35	50	34359738368	100	0.5	Control
36	50	68719476736	100	0.5	Control
37	50	137438953472	100	0.5	Control
38	50	274877906944	100	0.5	Control
39	50	549755813888	100	0.5	Control
40	50	1099511627776	100	0.5	Control
41	50	2199023255552	100	0.5	Control
42	50	4398046511104	100	0.5	Control
43	50	8796093022208	100	0.5	Control
44	50	17592186044416	100	0.5	Control
45	50	35184372088832	100	0.5	Control
46	50	70368744177664	100	0.5	Control
47	50	140737488355328	100	0.5	Control
48	50	281474976710656	100	0.5	Control
49	50	562949953421312	100	0.5	Control
50	50	1125899906842624	100	0.5	Control
51	50	2251799813685248	100	0.5	Control
52	50	4503599627370496	100	0.5	Control
53	50	9007199254740992	100	0.5	Control
54	50	18014398509481984	100	0.5	Control
55	50	36028797018963968	100	0.5	Control
56	50	72057594037927936	100	0.5	Control
57	50	144115188075855872	100	0.5	Control
58	50	288230376151711744	100	0.5	Control
59	50	576460752303423488	100	0.5	Control
60	50	1152921504606846976	100	0.5	Control
61	50	2305843009213693953	100	0.5	Control
62	50	4611686018427387906	100	0.5	Control
63	50	9223372036854775812	100	0.5	Control
64	50	18446744073709551624	100	0.5	Control
65	50	36893488147419103248	100	0.5	Control
66	50	73786976294838206496	100	0.5	Control
67	50	147573952589676412992	100	0.5	Control
68	50	295147905179352825984	100	0.5	Control
69	50	590295810358705651968	100	0.5	Control
70	50	1180591620717411303936	100	0.5	Control
71	50	2361183241434822607872	100	0.5	Control
72	50	4722366482869645215744	100	0.5	Control
73	50	9444732965739290431488	100	0.5	Control
74	50	18889465931478580862976	100	0.5	Control
75	50	37778931862957161725952	100	0.5	Control
76	50	75557863725914323451904	100	0.5	Control
77	50	151115727451828646903808	100	0.5	Control
78	50	302231454903657293807616	100	0.5	Control
79	50	604462909807314587615232	100	0.5	Control
80	50	1208925819614629175230464	100	0.5	Control
81	50	2417851639229258350460928	100	0.5	Control
82	50	4835703278458516700921856	100	0.5	Control
83	50	9671406556917033401843712	100	0.5	Control
84	50	19342813113834066803687424	100	0.5	Control
85	50	38685626227668133607374848	100	0.5	Control
86	50	77371252455336267214749696	100	0.5	Control
87	50	154742504910672534429499392	100	0.5	Control
88	50	309485009821345068858998784	100	0.5	Control
89	50	618970019642690137717997568	100	0.5	Control
90	50	1237940039285380275435995136	100	0.5	Control
91	50	2475880078570760550871990272	100	0.5	Control
92	50	4951760157141521101743980544	100	0.5	Control
93	50	9903520314283042203487961088	100	0.5	Control
94	50	19807040628566084406975922176	100	0.5	Control
95	50	39614081257132168813951844352	100	0.5	Control
96	50	79228162514264337627903688704	100	0.5	Control
97	50	158456325028528675255807377408	100	0.5	Control
98	50	316912650057057350511614754816	100	0.5	Control
99	50	633825300114114701023229509632	100	0.5	Control
100	50	1267650600228229402046459019264	100	0.5	Control

PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

J. O. SCHUYLER
VICE PRESIDENT
NUCLEAR POWER GENERATION

April 17, 1984

PGandE Letter No.: DCL-84-148

Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-76
Diablo Canyon Unit 1
Section III.J of Appendix R, Emergency Lighting - Additional Information

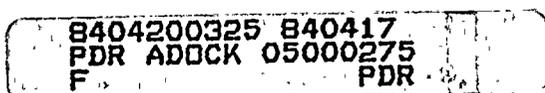
Dear Mr. Eisenhut:

PGandE's submittal to the NRC dated November 4, 1983 provided additional information on Appendix R review, Section III.J, Emergency Lighting. In that letter, PGandE committed to have an illumination of one foot-candle at floor level for those areas needed for operation of safe shutdown equipment, and in the access and egress routes thereto. This was in accordance with the guidelines of NFPA 101.

PGandE has performed a study of the emergency lighting level in the areas mentioned above. In this study, it was found that lighting levels less than one foot-candle at the floor were acceptable for implementing actions required for operation of safe shutdown equipment and along the access and egress routes to such equipment. A report of the emergency lighting levels study is provided as an enclosure to this letter.

Emergency lighting at Diablo Canyon will provide levels of illumination sufficient to allow required actions to be taken on safe shutdown systems. Therefore, PGandE requests that the previous commitment of an illumination of one foot-candle at floor level be changed to state:

"Emergency lighting at Diablo Canyon will provide a sufficient level of illumination to allow any needed operations of safe shutdown equipment and to assure that access and egress paths to such equipment also have adequate illumination for traverse of these paths."



B002
1/1



[Faint, illegible text, possibly bleed-through from the reverse side of the page.]

[Faint, illegible text, possibly bleed-through from the reverse side of the page.]

[Faint, illegible text, possibly bleed-through from the reverse side of the page.]

Mr. D. G. Eisenhut
April 17, 1984
PGandE Letter No. DCL-84-148
Page Two

This is consistent with the most recent guidance provided by the NRC Staff on levels of illumination discussed in workshops conducted by NRC Region III and Region V on the clarification of Appendix R requirements.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,


J. O. Schuyler

Enclosure

cc: Service List



1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960

1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050

2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150

ENCLOSURE

REPORT OF THE EMERGENCY LIGHTING LEVEL STUDY
FOR THE APPENDIX R FIRE PROTECTION REVIEW
AT DIABLO CANYON UNIT 1

INTRODUCTION

Two separate studies were conducted to ascertain Diablo Canyon Unit 1 compliance with 10 CFR 50 Appendix 'R' Section III.J "Emergency Lighting". These studies were conducted on December 5, 1983 and March 11, 1984. The purpose of these tests was to ensure the adequacy of emergency lighting levels along access and egress paths to safe shutdown equipment whose circuitry may be damaged by a postulated fire and would require local action by a plant operator. (Note: The test conducted on March 11, 1984 was a follow-up test subsequent to completion of modifications to the finding of the test conducted on December 5, 1983.)

METHODOLOGY

Based on the Appendix R Section III.G review, a list of safe shutdown equipment requiring operator action was assembled. Plant fire area drawings were marked with proposed access/egress routes to this equipment. A series of tests were scheduled at night with simulated loss of light due to loss of offsite power and fire damaged lighting circuits. Three engineers, each accompanied with a plant operator, walked down an assigned access and egress route to safe-shutdown equipment from the control room throughout the test. A digital lighting level meter was provided for each engineer to document the lighting level along the walkdown paths. Measurements were taken on a continuous basis at a level between zero and 4 feet above the floor. Where the measured lighting levels were less than one foot-candle, the actual light levels were noted; otherwise, the measured lighting levels were recorded as one foot-candle or greater along the paths.

Based on the initial test walkdown, the plant operators provided comments on the most effective access/egress routes. Additional lighting requirements were also specified based on the judgment of the walkdown teams. After completion of lighting modifications, a followup walkdown was conducted to assure adequacy of these changes.

RESULTS

In nearly all the access and egress paths, one foot-candle of lighting level or greater was available for operator action and traversing of these paths. For those small areas or "pockets" which exist along the above paths that were less than one foot-candle, it was determined that lighting was sufficient to allow the operator to traverse the paths. This judgment took into consideration the short distances over which the deviation from one foot-candle lighting level was observed, the potential for overhead or tripping hazards, lighting levels in and around the surrounding area, and proposed minor modifications. These minor modifications include re-aiming or adding lights which will be completed prior to ascension above 5% power.

