

06/23/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
DISTRIBUTION FOR INCOMING MATERIAL

50-275/523

REC: STOLZ J F
NRC

ORG: CRANE P A
PACIFIC GAS & ELEC

DOCDATE: 06/13/78
DATE RCVD: 06/23/78

DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:

COPIES RECEIVED
LTR 1 ENCL 40

FORWARDING RESPONSE TO INFORMAL REQUEST CONSISTING OF INFO ON SYSTEM
PROTECTION FOR SUSTAINED DEGRADED GRID VOLTAGE OF SUBJECT FACILITY'S.

PLANT NAME: DIABLO CANYON - UNIT 1
DIABLO CANYON - UNIT 2

REVIEWER INITIAL: XJM
DISTRIBUTER INITIAL: w

***** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS *****

NOTES:

J HANCHETT W/1 CY ALL MATERIAL
F HEBDON W/1 CY ALL SAFETY MATERIAL

PSAR/FSAR AMDTS AND RELATED CORESPONDENCE
(DISTRIBUTION CODE B001)

FOR ACTION: ASST DIR VASSALLO**LTR ONLY
PROJ MGR ALLISON**W/ENCL

BR CHIEF LWR#1 BC**LTR ONLY
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INTERNAL: REG FILE**W/ENCL
I & E**W/2 ENCL
OPERATOR LIC BR**W/ENCL
QAB**W/ENCL
MIPC**LTR ONLY
MECH ENG BR**W/ENCL
MATERIAL ENG BR**W/2 ENCL
REACTOR SYSTEMS BR**W/ENCL
CORE PERFORMANCE BR**W/ENCL
AUXILIARY SYS BR**W/ENCL
I & C SYSTEMS BR**W/ENCL
AD FOR SITE TECH**W/4 ENCL
ACCIDENT ANALYSIS**W/ENCL
RAD ASSESSMENT BR**W/ENCL
GEOSCIENCES BR**W/ENCL

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OELD**LTR ONLY
EMERGENCY PLAN BR**W/ENCL
DIRECTOR NRR**LTR ONLY
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STRUCTURAL ENG BR**W/ENCL
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ANALYSIS BR**W/ENCL
AD FOR PLANT SYSTEMS**LTR ONLY
CONTAINMENT SYSTEMS**W/ENCL
POWER SYS BR**W/ENCL
AD FOR SITE ANLYS**LTR ONLY
EFFLUENT TREAT SYS**W/ENCL
KIRKWOOD**W/ENCL

EXTERNAL: LPDR'S
SAN LUIS OBISPO, CA**W/ENCL
TIC**W/ENCL
NSIC**W/ENCL
ACRS CAT A**W/16 ENCL

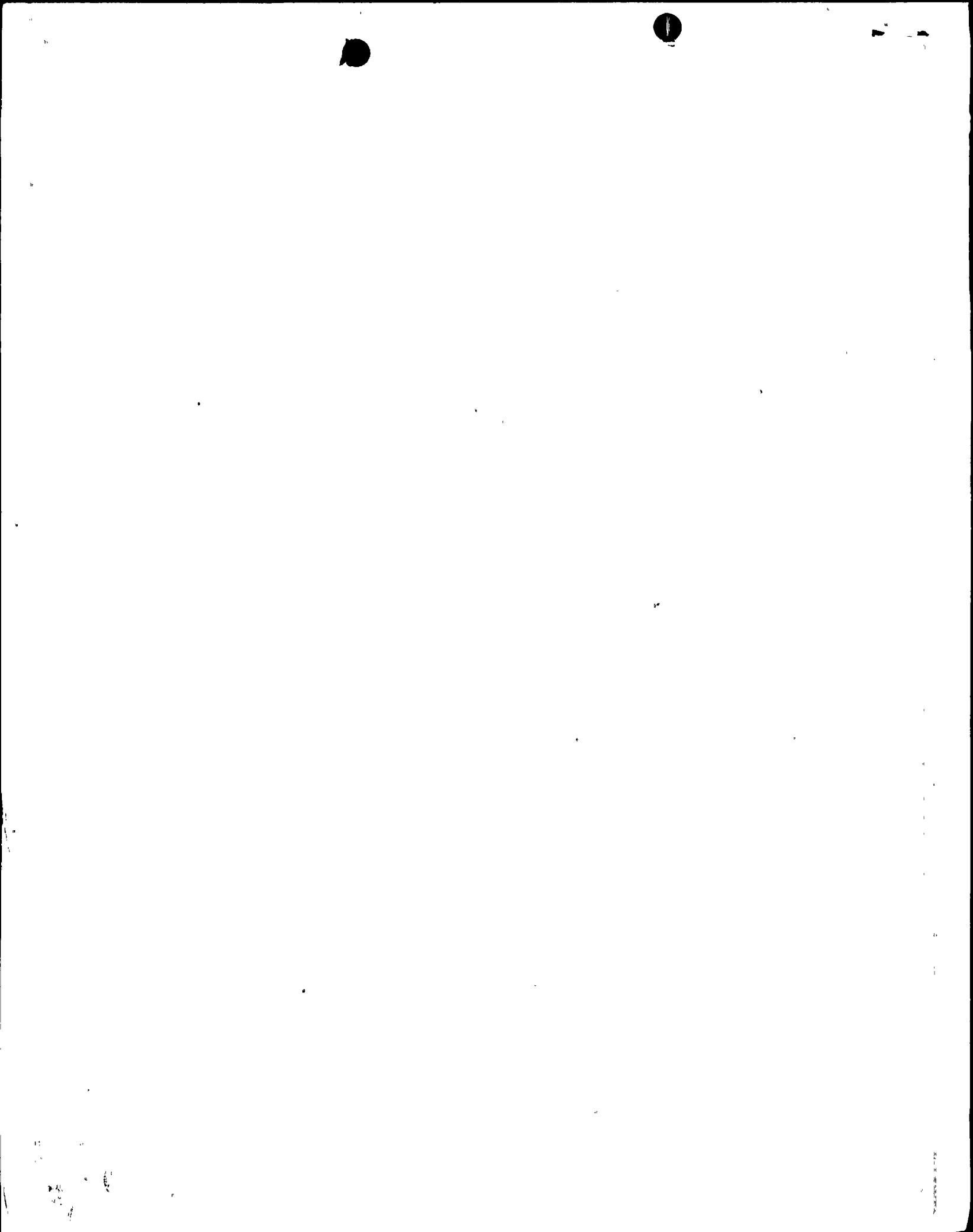
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DISTRIBUTION: LTR 37 ENCL 47
SIZE: 1P+1P

CONTROL NBR: 781740107

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REGISTRATION DOCUMENT 1001-1001

PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 77 BEALE STREET, 31ST FLOOR • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211

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June 13, 1978

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Mr. John F. Stolz, Chief
Light Water Reactors Branch No. 1
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Docket No. 50-275-OL
Docket No. 50-323-OL
Diablo Canyon Units 1 and 2

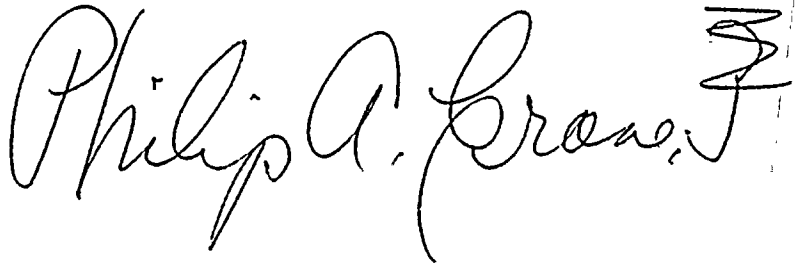
Dear Mr. Stolz:

In response to an informal request for further information on system protection for sustained degraded grid voltage conditions, the attached material clarifies the protection device set points.

Five copies of this response have been sent directly to Mr. Dennis Allison.

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

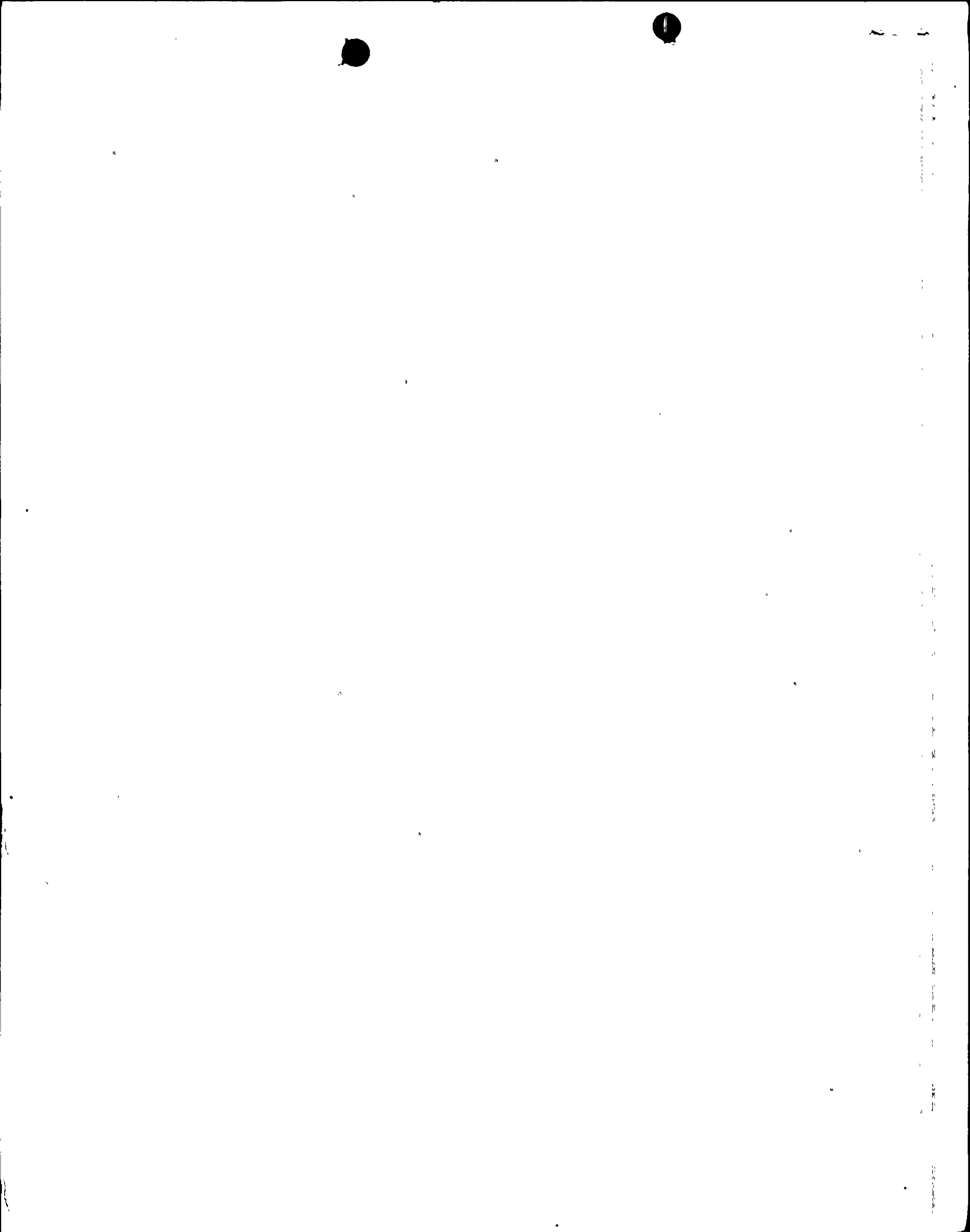
Very truly yours,



Attachment
CC w/enc.: Service List

781740107

Boo!
5/11/80



PROTECTION DEVICE SET POINTS

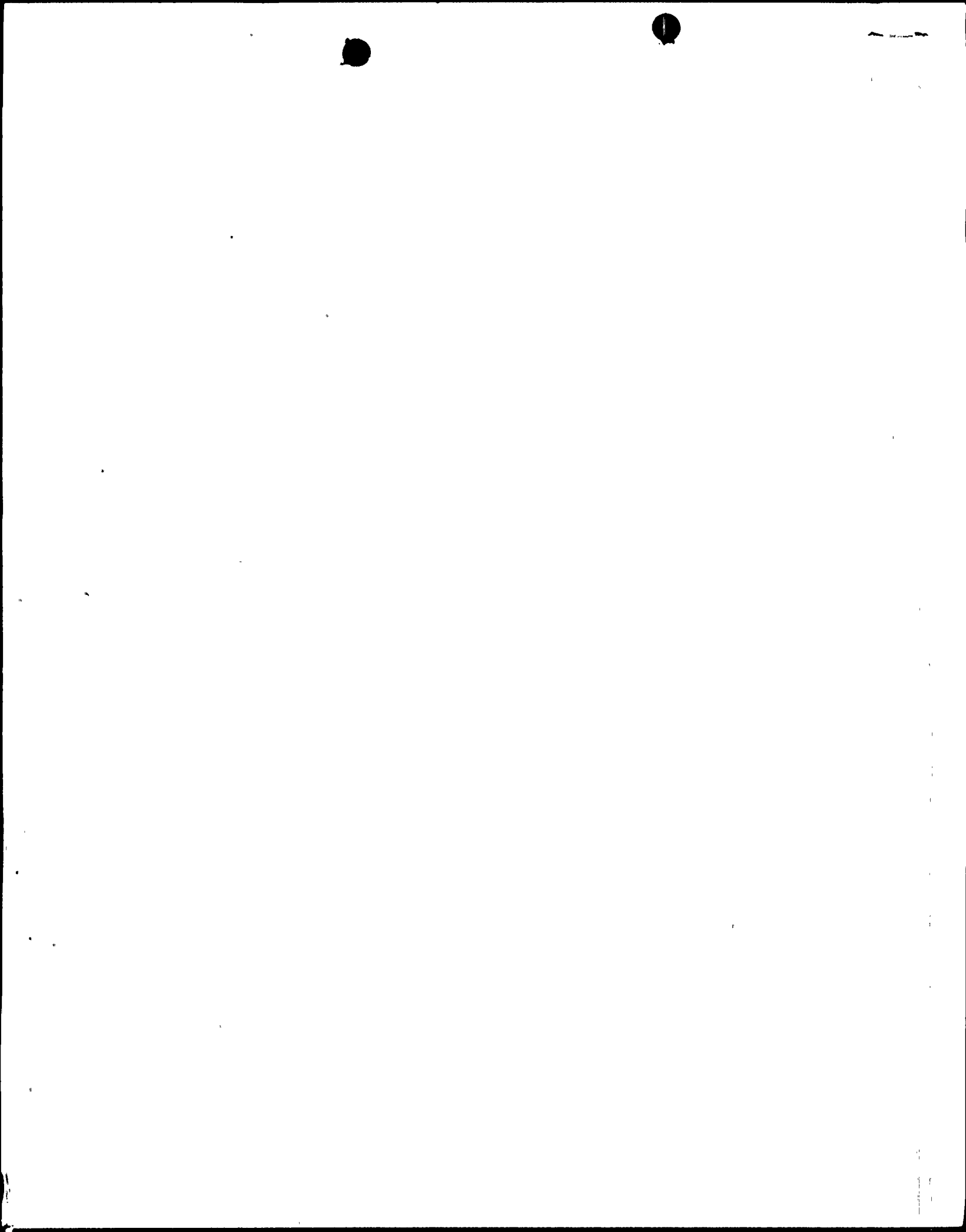
As described in previous submittals, the undervoltage sensors will initiate the transfer of the ESF busses to a different voltage source upon detection of undervoltage. The time delay of the transfer is a function of the degree of undervoltage. At the setpoints currently selected, motors could be subjected to low voltage for some unknown period of time.

After reviewing the settings on the protection devices, we have determined that the set points can be adjusted so that transfer to the Standby Start-up source will be delayed approximately 5 seconds after the voltage drops to 3100 volts.

If the voltage continues to be low after transfer to the Stand-by Stand-up source, load shedding would be initiated at 3100 volts after a delay of 19 seconds. The delay is inversely proportional to the degree of low voltage: at 0 volts the delay would be only 4 seconds.

If the safety related motors were to be operated at 77% voltage (3080 volts) for approximately 3 hours, their calculated loss of life would be only 1%. The power plant operator would however be alerted to any condition where the voltage would be reduced to 90% or less and would not permit that condition to continue.

Therefore it is our conclusion that motors operating from the ESF busses would be adequately protected from any adverse effects of degraded grid voltage.



Docket File



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

June 12, 1978

Docket No. 50-275/50-323

TO ALL POWER REACTOR LICENSEES AND APPLICANTS WITH APPLICATIONS
FOR A LICENSE TO CONSTRUCT OR OPERATE A POWER REACTOR

Gentlemen:

Enclosed for your information and use are two Sandia reports that are being sent to all power reactor licensees and applicants with applications for a license to construct or operate a power reactor. Both reports are provided as reference documents.

The first report, "The Barrier Technology Handbook", dated November 1977, is designed to provide state-of-the-art information on the role of barriers in security. The second report, "A Systematic Approach to the Conceptual Design of Physical Protection Systems for Nuclear Facilities", dated May 1978, outlines the concept of a physical protection system and an approach to the evaluation of the relative effectiveness of physical protection system designs is described.

Feedback on these reports is encouraged from all recipients and should be addressed to Dr. Samuel C. T. McDowell, Assistant Director for Research and Development, Division of Safeguards and Security, Department of Energy, Washington, D. C., 20545.

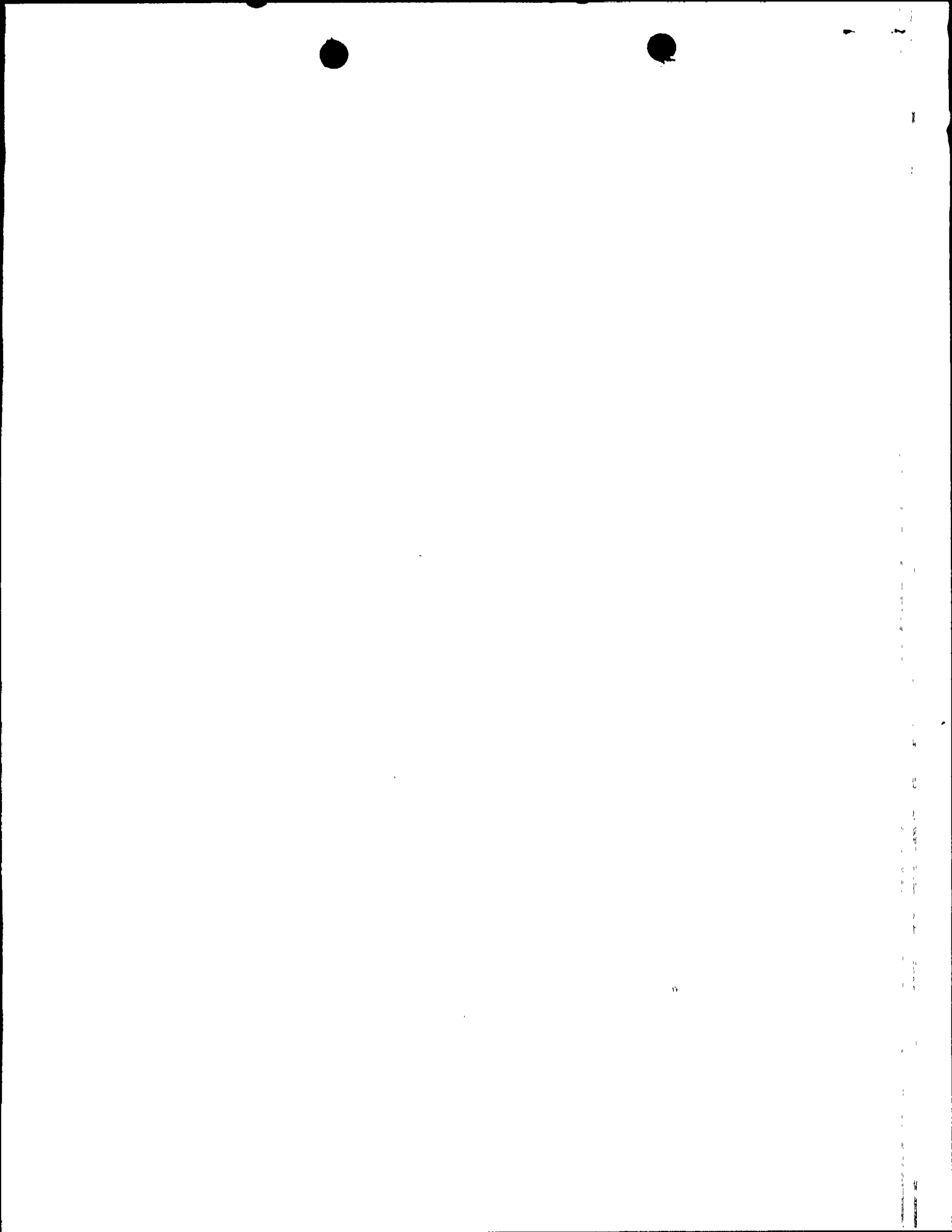
Sincerely,

James R. Miller
James R. Miller, Assistant Director
for Reactor Safeguards
Division of Operating Reactors

Enclosures:
As Stated

cc w/o enclosures:
See Page 2

MAH



Pacific Gas and Electric Company -2-

June 12, 1978

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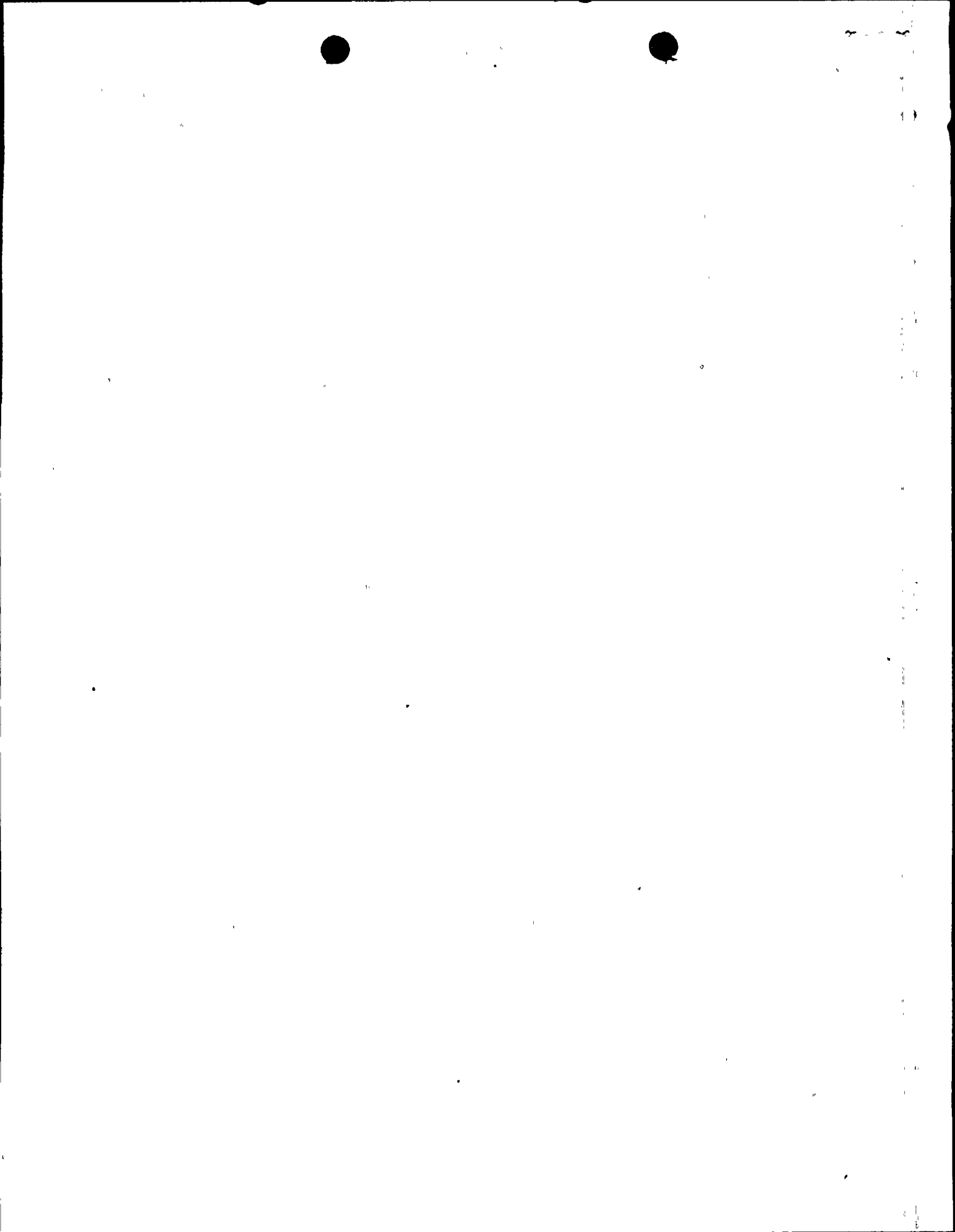
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