

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9805080133 DOC.DATE: 98/02/18 NOTARIZED: NO DOCKET #
FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
GREENE,B.E. Teledyne Energy Systems
JOHNS,R.K. Teledyne Energy Systems
RECIP.NAME RECIPIENT AFFILIATION
Region 4 (Post 820201)

SUBJECT: Part 21 rept re 971113 switch failures at Nine Mile Point,
Unit 1.Caused by lubricant used in manufacturer.Corrective
actions:all parts will be visually inspected for defective
date codes indentified in mfg ltr of 940516.

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TITLE: Part 21 Rept (50 DKT)

NOTES:

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	NRR/DRPM/PECB/B	1 1	PDR WARD, M.	1 1
	RES/DET/EIB	1 1	RGN1	1 1
	RGN2	1 1	RGN3	1 1
	RGN4	1 1		
EXTERNAL:	INPO RECORD CTR	1 1	NOAC SILVER,E	1 1
	NRC PDR	1 1	NUDOCS FULL TXT	1 1

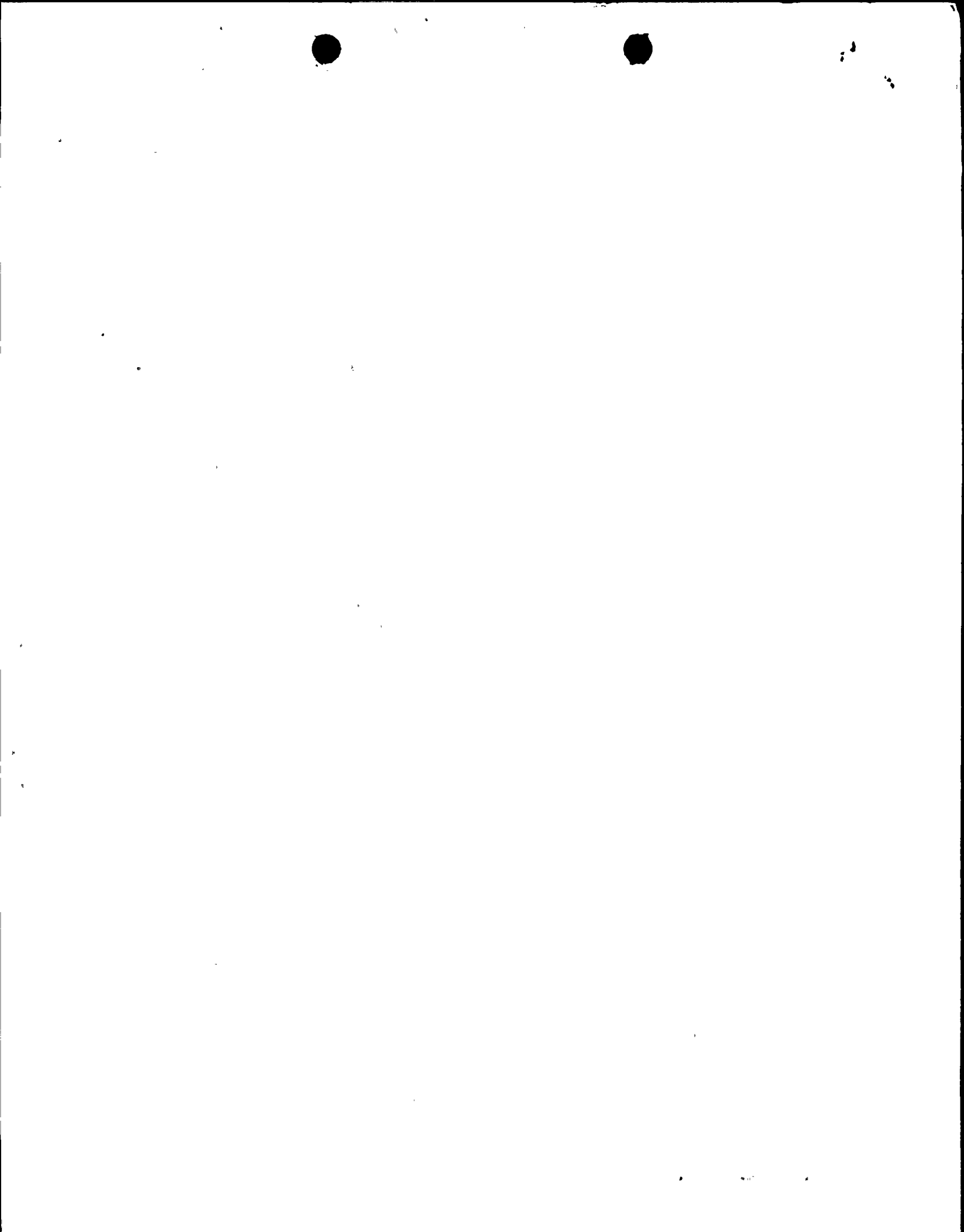
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ELECTRONIC TECHNOLOGIES
Analytical Instruments

An Allegheny Teledyne Company

16830 CHESTNUT STREET, CITY OF INDUSTRY, CA 91748-1020
P.O. BOX 1580, CITY OF INDUSTRY, CA 91749-1580
TELEPHONE: (626) 934-1500 OR (626) 961-9221
FAX: (626) 961-2538

P21 98-23-0

February 18, 1998

U.S. Nuclear Regulatory Commission, Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

To Whom it May Concern:

This letter serves as Teledyne Electronic Technologies/Analytical Instruments (TET/AI) corrective action plan notification to the Nuclear Regulatory Commission (NRC) related to the problem Teledyne informed you of on November 25, 1997 with switch part number S505. The attachments to this letter have been sent to all of the customers listed at the bottom of the letter addressed to "Dear Customer".

Sincerely,



Brian E. Greene
Quality Assurance Director

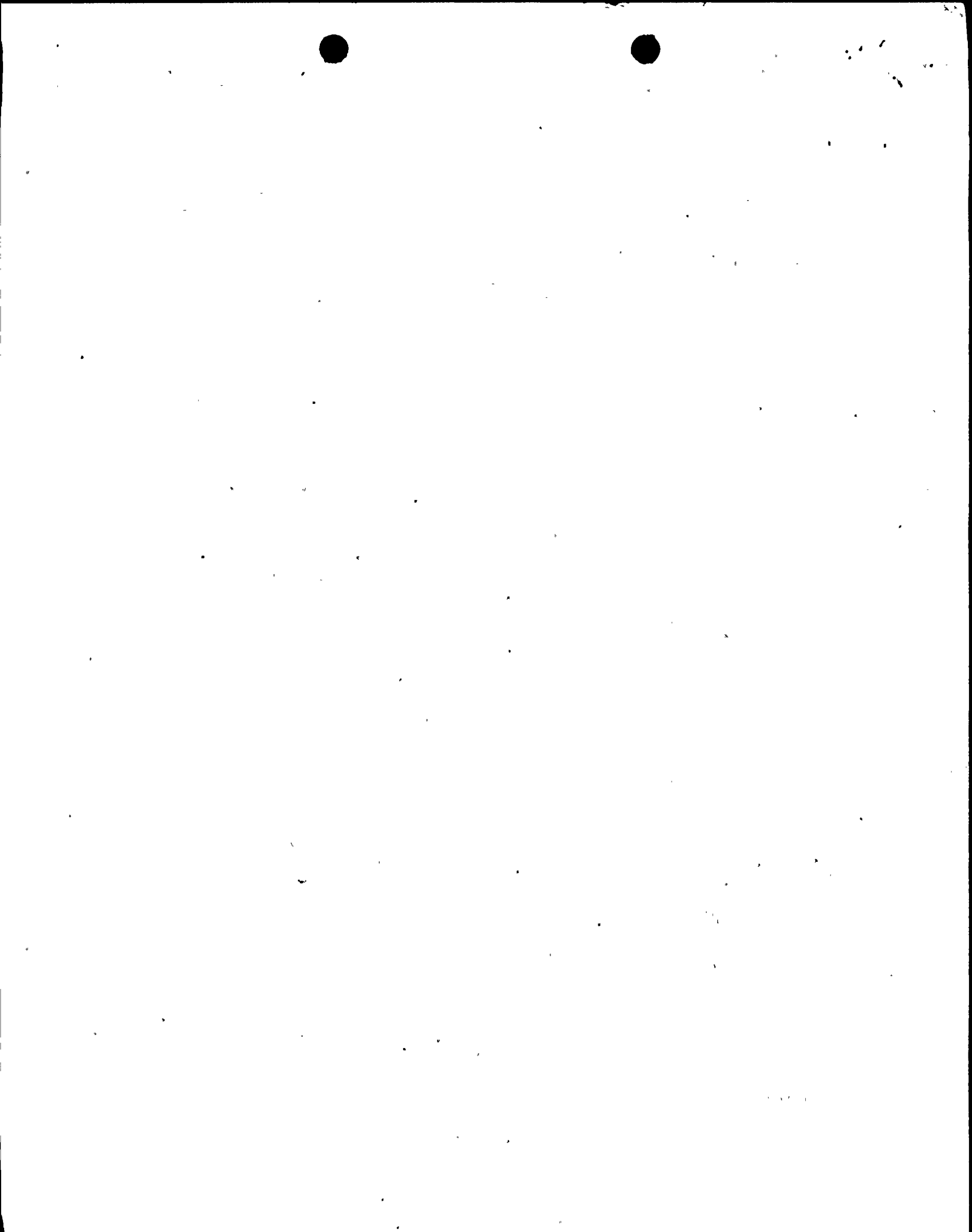


Robert K. Johns
Nuclear Project Engineer

9805080133 980218
PDR ADDCK 05000220
S PDR

Reference #:BG02-98-016

1/1
JEM





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FAX: (626) 961-2538

Dear Customer:

We at Teledyne Electronic Technologies/Analytical Instruments are writing to inform you of a defect we have become aware of in two switches that are part of the configuration of the Model 225 Hydrogen Containment Monitor. The defective switches are Teledyne part numbers S505 and S523.

We received a report from Niagara Mohawk Power Corporation which describes a problem related to the S505 switch. We have been informed by the switch manufacturer that all switches, Teledyne part number S505 and S523, with date codes from 9204 through 9336 may potentially have a lubrication problem.

At this point we have notified the NRC region V office of the issue and have submitted the attached documents to explain the cause of the problem and the corrective action plan Teledyne is recommending.

If you have any questions or need further clarification, please call and ask for Brian Greene, Quality Assurance Director or Kim Johns, Nuclear Engineer at (888) 798-8168.

CC:

USNRC Region V
Duquesne Light & Power
Carolina Power & Light
Florida Power Corp.
Korea Electric Co.
Duke Power Co.
Vermont Yankee Nuclear Power Corp.
Hidroelectrica Espanola, S.A.
Niagara Mohawk Power Corp.

General Electric Co.
Commonwealth Edison Co.
Bernische Kraftwerks AG
Westinghouse Nuclear Espanola
Louisiana Power & Light
Taiwan-Power Co.
Perfect Technologies LTD
ACAL Auriema LTD
Nuclenor, Spain



Please make all entries legible

CORRECTIVE/PREVENTIVE ACTION REQUEST

Date: 12/16/97

No. 122

Initiator/Employee Brian E. Greene	S/O or W/O# (if applicable) N/A	Due Dates: Plan: <u>1/6/98</u> Completion: <u>2/3/98</u> Extension: _____
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Program/Project/Customer Niagara Mohawk Power Corp.	Part Description/Part No. Switch/S505	Responsible Dept. Eng./QA
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Actionee assigned <i>M. M. Adams</i>	Date <u>12/16/97</u>	QA Manager or Designee <i>BE Greene</i>	Date <u>12/16/97</u>
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DESCRIPTION OF PROBLEM/CONDITION

In a panel walkdown at the Niagara Mohawk plant it was noticed that the H2 and O2 indications were increasing on the channel 11 system. The O2 reading was above the alarm setpoint and the alarm was not received. the switch was found to be the cause of the alarm failure

6821

CAUSE:

Defective component supplied from the vendor ^{to} the Teledyne. Refer to the vendor letter date May 16, 1994.

CORRECTIVE/PREVENTIVE ACTION

Refer to the attached memorandum from Kim Johns dated February 11, 1998

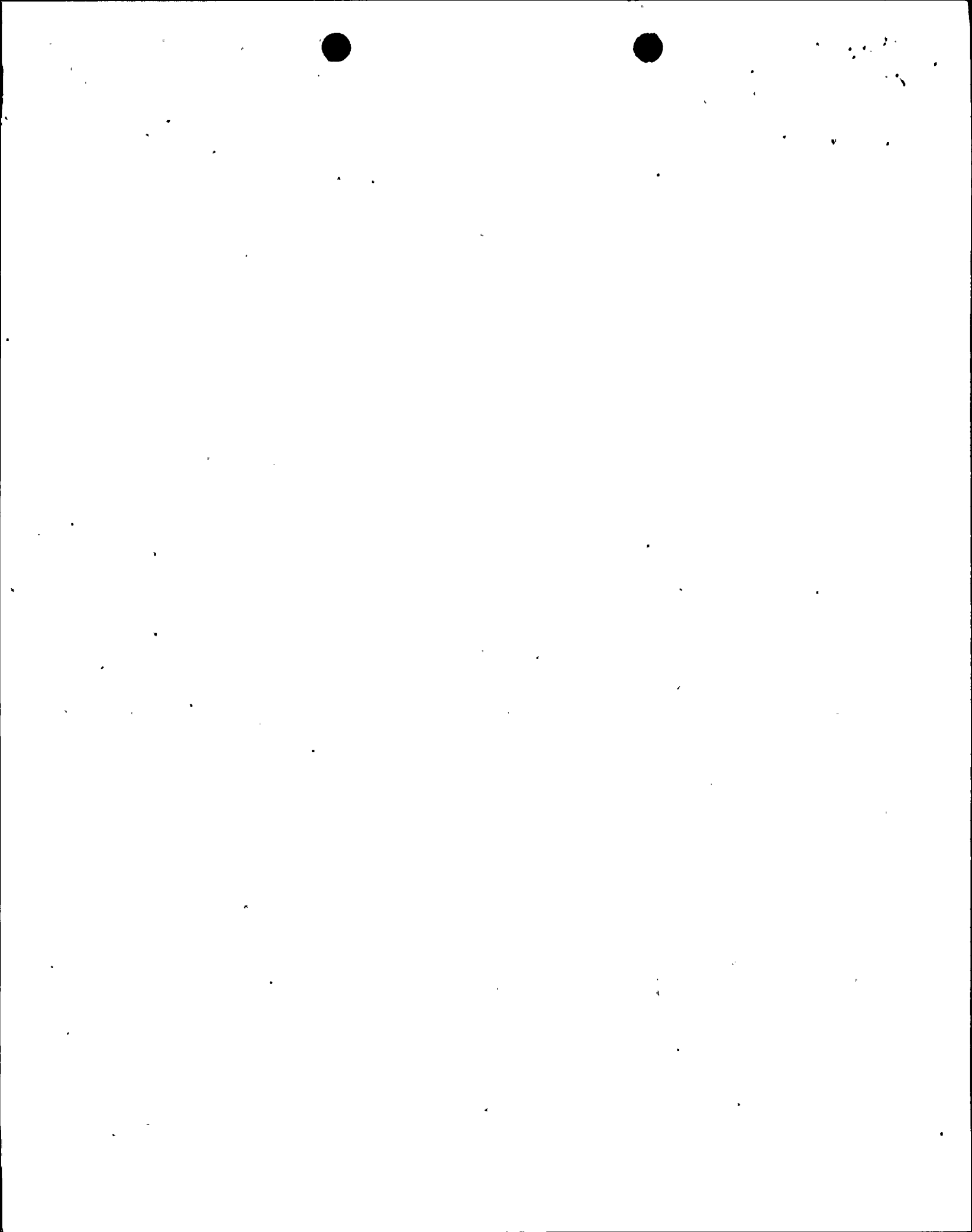
PLAN ACCEPTANCE SIGN-OFF

QA Signature <i>BE Greene</i>	Title <i>QA Director</i>	Date <u>2/12/98</u>
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FOLLOW-UP VERIFICATION

COMPLETION SIGN-OFF

Actionee Signature	Title	Date
QA Signature	Title	Date



MEMORANDUM

DATE: February 11, 1998
TO: Brian Greene
FROM: Kim Johns
CC: Rick Pettit, Ed Chu, Mann Nguyen
SUBJECT: Engineering evaluation of problems reported in Niagara Mohawk Power Corp. letter dated November 13, 1997 to Brian Greene.

On November 13, 1997 a letter was received from Niagara Mohawk Power Corp. (NMPC) which stated that they were experiencing switch failures associated with the two (2) Model 225 CMA-X Containment Monitoring Systems at the Nine Mile Point Unit 1 Nuclear Station. The following is the evaluation of the reported switch (TET/AI Part No. S505) failure which did result in a 10CFR21 report filing dated November 25, 1997.

Analysis of the Suspected Defect

The switch is a miniature toggle type with momentary action. The switch is manufactured by Eaton Corporation. The reported failure is that the switch (TET/AI P/N S505) contacts failed in an open circuit condition causing the inlet gas flow to the system to be interrupted and the alarms to be inhibited.

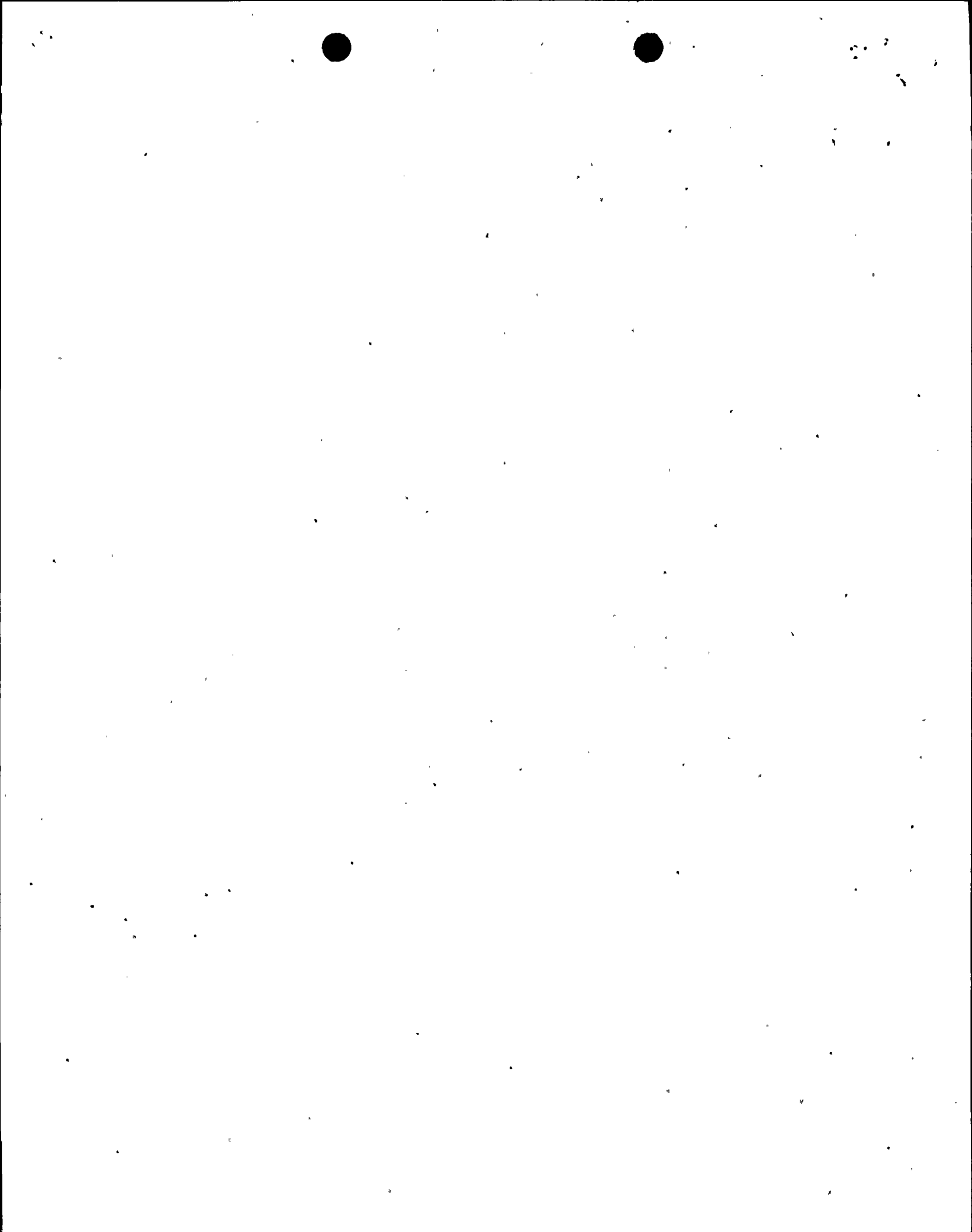
NMPC engineering department reported that one switch was disassembled and the internal components were inspected and found corrosion internal to the switch, no lubricant in the switch, and the adhesive had dried up and let go.

Two (2) switches were returned by NMPC for TET/AI to evaluate. One switch was described above as being disassembled and the other was replaced but not disassembled. These two (2) switches have Eaton Corporation date codes of 9246 and were returned to the manufacture for evaluation. The manufacture also provided a copy of their Product Reliability Notification dated May 16, 1994 (see the enclosed report).

The switch manufacture confirmed that the two (2) suspect switches fall into the date code range of 9204 through 9336. The report identified a potential problem with the grease (i.e. lubricant) used in the manufacture of the switches. The report is also in agreement with the evaluation done by the NMPC engineering department.

Corrective Action Plan

TET/AI recommends that all parts (i.e. TET/AI P/N's S505 and S523) be visually inspected for the defective date codes identified in the Eaton Corporation letter dated May 16, 1994. TET/AI purchases commercial grade items and then dedicates these items as one lot. Upon receipt, TET/AI assigns a lot number. This lot number does not correlate with the vendors date codes. Because of this, TET/AI cannot provide a cross reference between the known defective manufactures date codes and the TET/AI lot numbers.



MEMORANDUM

DATE: February 11, 1998
SUBJECT: Switch Problems
PAGE 2 OF 2

The following standard documents (attached) identify the location of the switches (i.e. TET/AI P/N's S505 and S523) of the Model 225CM Containment Monitor.

<u>Document Number</u>	<u>Description</u>
D61227	Control Cabinet Assembly
C24300	Control Unit, H2 Module, Front Panel Sub-assembly
C24301	Control Unit, O2 Module, Front Panel Sub-assembly
C28576	Control Unit, Sequencer Module, Assembly

The above documents are used on standard systems. If the system is custom, the description and location of the switches would be similar.

If any switches are found with these date codes and they were purchased from TET/AI, please contact either Pat Stamper of the Customer Service Department or Brian Greene, the Quality Assurance Director, and the switches will be replaced free of charge.



Eaton Corporation
Commercial Controls Division
331 City Park Drive, S.E.
Arab, AL 35016
205 / 586-6061
FAX: 205 / 586-1325



URGENT! IMMEDIATE ATTENTION REQUIRED

May 16, 1994

To: Our Valued Customer

Subject: PRODUCT RELIABILITY NOTIFICATION

Analysis of product warranty claims has identified a potential problem on certain Miniature Toggle and Rocker switches produced between February 1992 and August 1993, which might create a risk of personal injury or property damage. Date codes affected are 9204 through 9336.

A potential exists for the grease, used inside these switches for mechanical wear purposes, to lose its lubricity causing intermittent continuity and/or difficulty in tripping the actuator. Based upon analysis of returned product and extensive internal evaluation, it is Eaton's opinion that the potential problem is most likely to occur under conditions of exposure to elevated temperatures or high humidity for extended periods of time. The number of warranty claims reported is small compared to the volume of product produced in this time period. To date, less than 1% of product produced has been returned to Eaton for replacement. However in some circumstances, under conditions stated above, this could possibly result in an application problem should the switch not operate or make circuit. **SINCE EATON DOES NOT KNOW THE SPECIFICS OF YOUR APPLICATION, IT IS VERY IMPORTANT THAT YOU DETERMINE WHETHER THE CONDITIONS STATED ABOVE REPRESENT A RISK OF PERSONAL INJURY OR PROPERTY DAMAGE POTENTIAL IN YOUR PRODUCT.**

To reduce the potential of this problem continuing, Eaton has made process changes in the preservation of mechanical components and converted to a grease containing additional anti-corrosive additives and higher operating temperature capabilities. Switches produced since September 1993 (Date Code 9337) should not exhibit these potential characteristics when applied in accordance with advertised specifications.

PLEASE FOLLOW THESE VERY IMPORTANT INSTRUCTIONS:

1. To aid you in identification of specific switches with the potential for characteristics as described above, we have enclosed a list of catalog numbers, ship dates, order numbers, and quantities which were shipped to you during this time period.



2. Evaluate the attached list to determine whether the potential problem described above has been experienced by your company or whether the conditions described are relevant to your application. If so, please follow return/replacement procedures which follow.
3. Suspect product from your inventory, as identified on the enclosed list, should be returned to Eaton for replacement following the instructions given below. All switches returned will be replaced on a one for one basis at no charge to you.

Return/Replacement Procedure:

1. Contact the Arab Manufacturing Plant at 205-586-9220 and ask for Anthony Sorcic who will assign a Return Authorization Number. It is important to write this assigned number on the packing list (itemized by product catalog number and quantity) and on the outside of the shipping carton.
2. Supply Anthony Sorcic with a list of material to be returned for replacement (identified by product catalog number, quantity and date code) by phone 205-586-9220; or FAX 205-586-1325; or mail to:

Eaton Corporation
Commercial Controls Division
331 City Park Drive
Arab, Alabama 35016

Return Number _____
Attn: Anthony Sorcic

3. Return the suspect devices to the above address. Eaton will pay all return and re-shipment costs.
4. We request that you respond within 15 days of receipt of this notice.

We thank you for your help.

Ferrel Click
Quality Assurance Manager

