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 FACIL: 50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
 AUTH. NAME AUTHOR AFFILIATION
 MAZZAFERRO, P.A. Niagara Mohawk Power Corp.
 WILLIS, J.L. Niagara Mohawk Power Corp.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-016-00: on 880707, personnel error permitted calibr of
 MSIV 10% closure position switches in excess of Tech Spec. W/8 ltr.

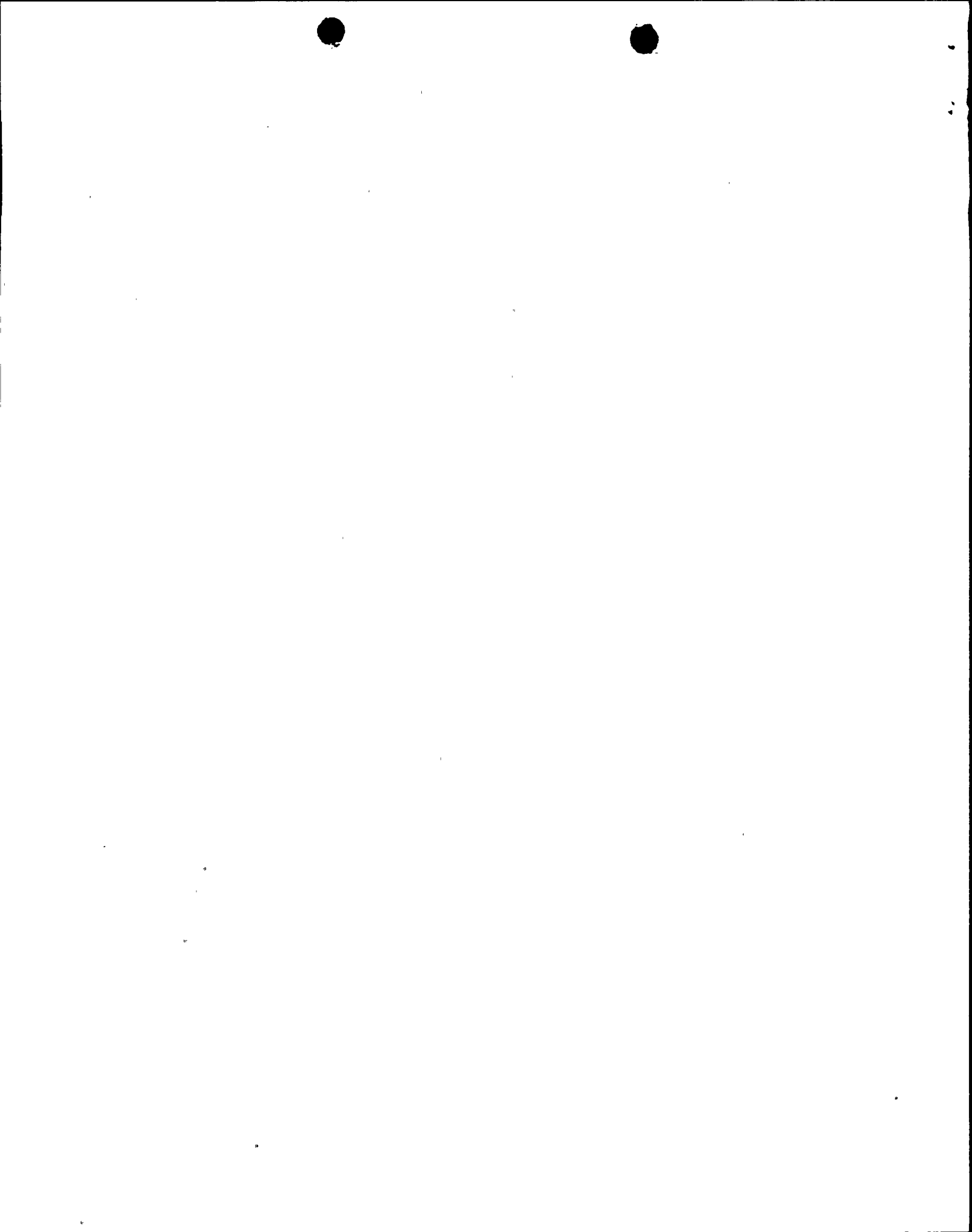
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 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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	RES/DSIR DEPY	1	1		RES/DSIR/EIB	1	1	
	RES/DSR DEPY	1	1		RGN1 FILE 01	1	1	
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Nine Mile Point Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 2 2 0	PAGE (3) 1 OF 0 5
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TITLE (4)
Personnel Error Permitted Calibration of Main Steam Isolation Valve 10% Closure Position Switches Greater Than The Technical Specification Limit

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
07	07	88	88	016	0	08	05	88			
									DOCKET NUMBER(S) 0 5 0 0 0		

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											
POWER LEVEL (10) 0 0 0	20.402(b)			20.406(c)			50.73(a)(2)(iv)			73.71(b)		
	20.406(a)(1)(i)			50.38(a)(1)			50.73(a)(2)(v)			73.71(c)		
	20.406(a)(1)(ii)			50.38(c)(2)			50.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
	20.406(a)(1)(iii)			50.73(a)(2)(ii) <input checked="" type="checkbox"/>			50.73(a)(2)(viii)(A)					
	20.406(a)(1)(iv)			50.73(a)(2)(iii)			50.73(a)(2)(viii)(B)					
20.406(a)(1)(v)			50.73(a)(2)(iv)			50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)

NAME Peter A. Mazzaferro, Supervisor, Technical Support	TELEPHONE NUMBER 3 1 5 3 4 9 7 2 1 9 0
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT

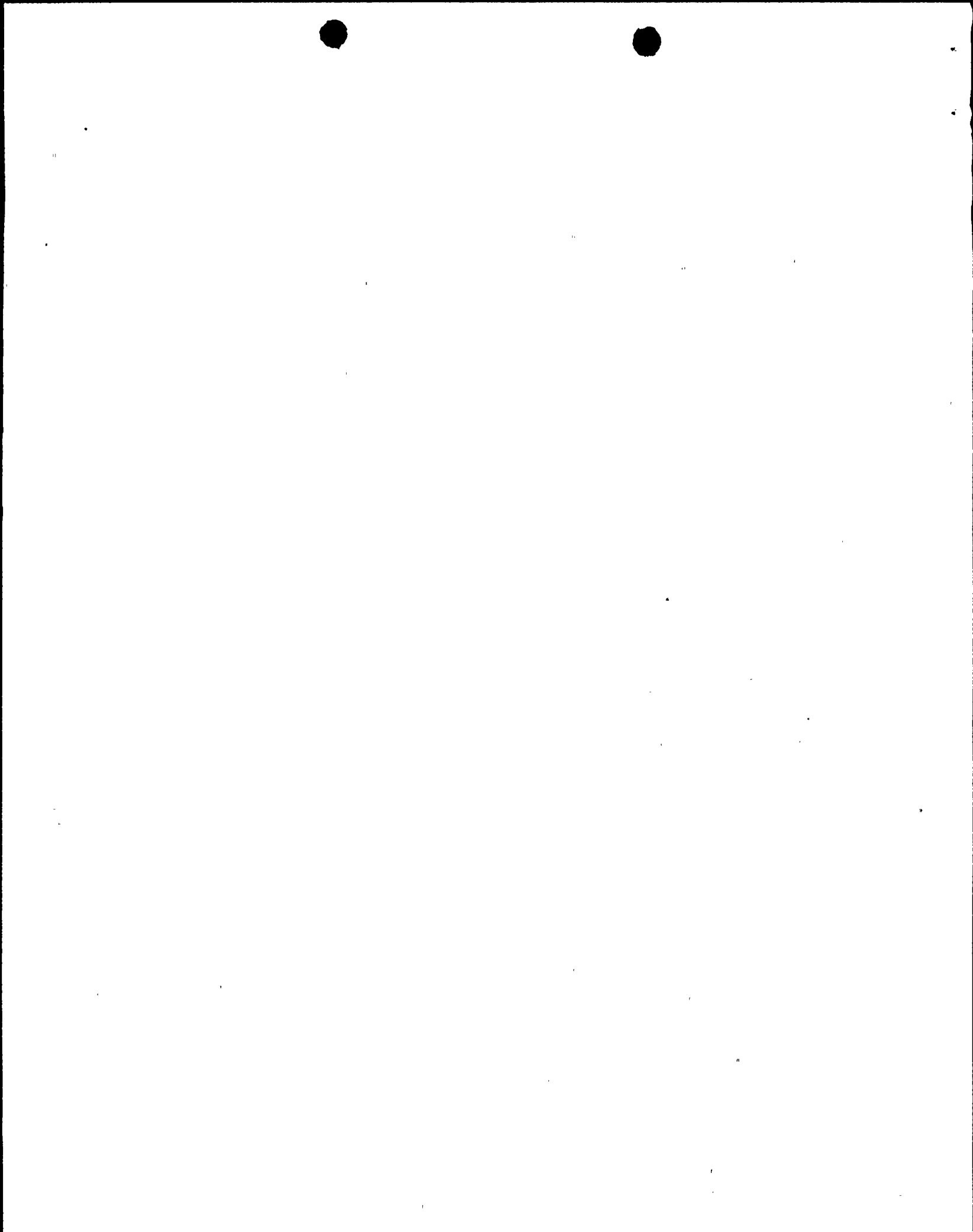
On July 7, 1988, while dispositioning a problem report, Nine Mile Point Unit 1 (NMP1) Engineering and Licensing personnel discovered that the inboard Main Steam Isolation Valve 10% closure, scram initiation limit switches were calibrated in excess of the Technical Specification (Tech. Spec.) limit during the 1986 refueling outage. A setpoint of less than or equal to 10% closed is required by Tech. Specs. Further research indicated that this also occurred during the 1984 refueling outage. Nine Mile Point Unit 1 was in a refueling outage with the core off-loaded at the time of the discovery of this event.

This event occurred as a result of an electrical surveillance procedure deficiency. The root cause of the event has been determined to be personnel error attributed to inadequate/ineffective review of the procedure.

Initial corrective actions included initiating an Occurrence Report to identify the event, verifying that the present limit switch setpoints are within Tech. Spec. limits and initiating a revision to the electrical surveillance procedure. A review of setpoints in all NMP1 electrical surveillance procedures and a number of instrument surveillance procedures was performed. The review indicates that this is an isolated problem. Additional corrective action will include issuing a Lessons Learned Transmittal stressing the need to provide adequate technical procedure reviews.

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

DESCRIPTION OF THE EVENT

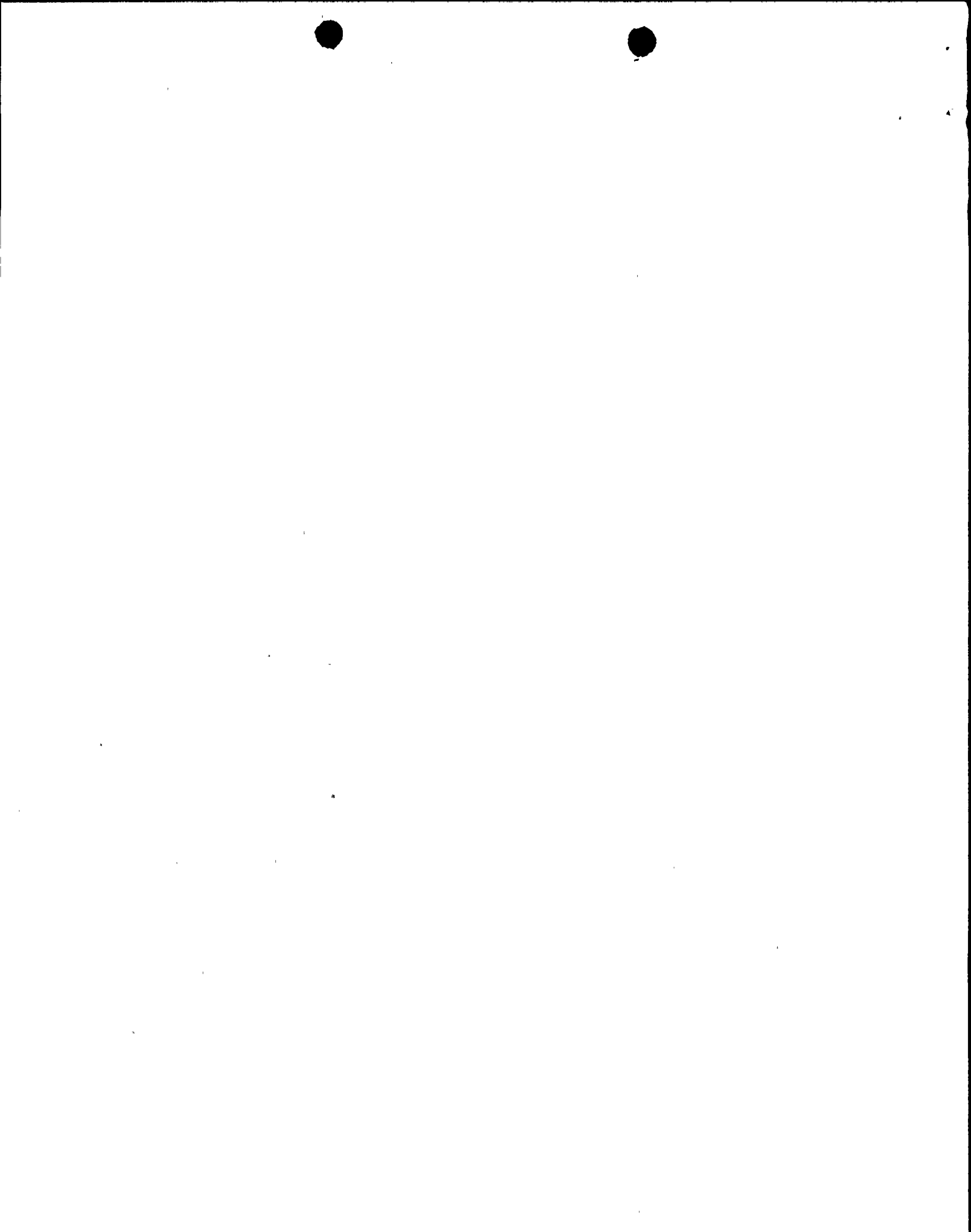
On July 7, 1988, it was discovered that the inboard Main Steam Isolation Valve (MSIV) 10% closure, scram initiation limit switches had been calibrated in excess of their Technical Specification (Tech. Spec.) limit. A setpoint of less than or equal to 10% closed is required by Tech. Specs. Sections 3.6.2, Table 3.6.2a and 2.1.2h, Limiting Safety System Setting (LSSS). Research revealed that the Tech. Spec. limit was exceeded during cyclic calibration in both the 1984 and 1986 refueling outages per an approved procedure. During this time, the outboard air operated MSIV 10% closure limit switches were calibrated by the I&C Department in accordance with Tech. Specs., and were available to provide the required safety function.

The station was in a cold shutdown condition during a refueling outage with the core off-loaded at the time this Tech. Spec. violation was discovered. The Tech. Spec. violation was discovered while Engineering and Licensing personnel were attempting to disposition Problem Report No. 27 regarding the generation of a half scram when performing the MSIV 7% closure test. During the inboard MSIV 7% closure test, momentum usually causes the valves to coast past the 10% scram setpoint. This is because the valve actuator brake assembly was removed in 1984 since it did not meet the requirements of the Equipment Qualification (EQ) rule.

An error in the cyclic electrical surveillance procedure NI-EST-C1, Revision 0, allowed the limit switches to be calibrated to 10% closed plus or minus 2.5% during the 1984 and 1986 refueling outages. The 10% limit switches had been calibrated per procedure at the high end of the setpoint range (i.e. at 12.5% instead of less than or equal to 10%, as required by Tech. Specs.). The 7% switches were calibrated at the low end of their allowable deviation. The switches were adjusted this way in an attempt to prevent a half scram when the MSIV 7% closure test was conducted.

CAUSE OF THE EVENT

This event is the result of an error in the electrical surveillance procedure which was originally approved in 1984, before the cyclic calibration requirement for MSIV 10% closure was added to Tech. Spec. Table 4.6.2a. This requirement was added per Tech. Spec. Amendment No. 61, dated May 8, 1984. The procedural error was the result of a personnel error by the original author and reviewers, who incorrectly interpreted information within Tech. Spec. Bases for 3.6.2 and 4.6.2 regarding allowable setpoint deviations. These deviations are actually setpoint ranges which are compensated for in the FSAR transient analyses. They include inherent instrument error, operator setting error and drift of the setpoint. The author of the procedure interpreted the setpoint deviation as a range in which the limit switches could be set.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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CAUSE OF THE EVENT (Cont'd)

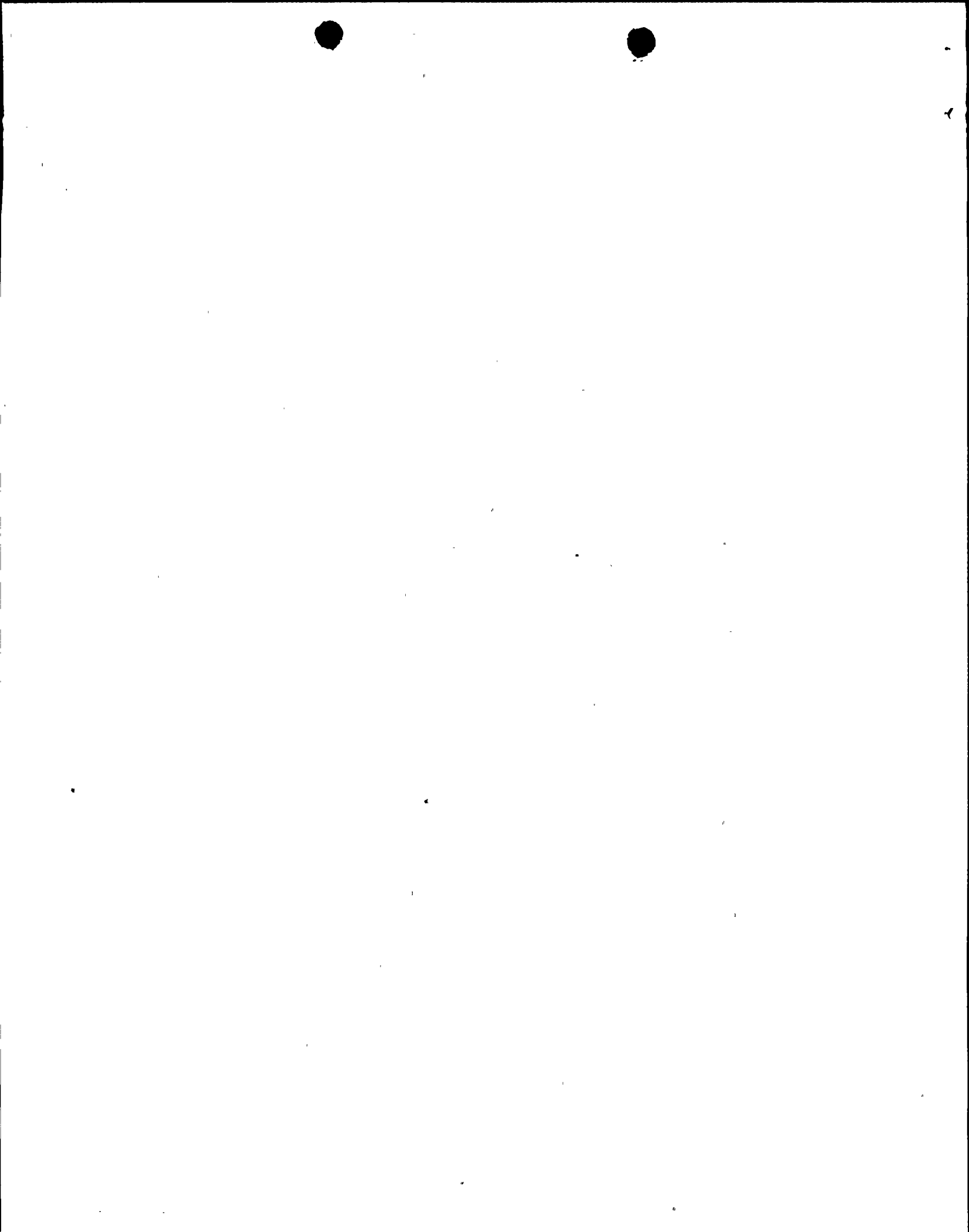
A similar misinterpretation of the allowable setpoint deviations listed in the Tech. Spec. 3.6.2 and 4.6.2 Bases occurred when many of the original surveillance tests were first developed. This resulted in inconsistencies between surveillance requirements and Tech. Specs. This became evident in 1974. On December 4, 1974, SORC charged the I&C Group to review all setpoints in Instrument Surveillance Procedures with current Tech. Specs. Other surveillance procedures were not included in this review because these Bases statements only affected I&C surveillances. No surveillance requirements existed for the inboard MSIV position switches at that time. The Tech. Spec. limit did, however, exist.

A contributing factor to this event is the existence of historical MSIV limit switch calibration data that is inconsistent with Tech. Spec. requirements. When originally calibrated in 1969 per Pre-operational Test Procedure No. 45, "Reactor Protection System," three of the four limit switches were calibrated in excess of the Tech. Spec. limit. This is presumably due to the same misinterpretation of the Tech. Spec. 3.6.2 and 4.6.2 Bases statements. Thus a practice inconsistent with Tech. Specs was established. This established practice was incorporated into the electrical surveillance procedure when it was developed in 1984.

The original issue of the electrical surveillance procedure preceded a Tech. Spec. amendment requiring cross disciplinary review of procedures. The original reviewers of the procedure included four Maintenance Department personnel. The only external department reviewer was from the QA Department. The reviewers' lack of familiarity with interpreting NMPL's Tech. Specs., coupled with the lack of cross-disciplinary review contributed to the procedural error. If the Tech. Spec. Bases are taken out of context, the statement regarding allowable setpoint deviations appears to be correctly applied in the electrical surveillance procedure. Nevertheless, the procedure was not adequately reviewed for compliance with Tech. Specs.

Subsequent revisions to the original issue of the electrical surveillance procedure, were accomplished in accordance with Administrative Procedure AP-2.0, "Production and Control of Procedures", which reflected the Tech. Spec. ammendment regarding technical review and control. However, the incorrect setpoint range already existed in the previously approved procedure. When revisions to the procedure were reviewed, the incorrect setpoint range was either overlooked or Tech. Specs. were misinterpreted by the reviewers.

The removal of the inboard MSIV actuator brake was a contributing factor to setting of the limit switches in excess of the Tech. Spec. limit. The removal of the brake caused the generation of half scrams. The limit switches were set at the high end of the setpoint range listed in the electrical surveillance procedure in an effort to prevent the half scrams.



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ANALYSIS OF THE EVENT

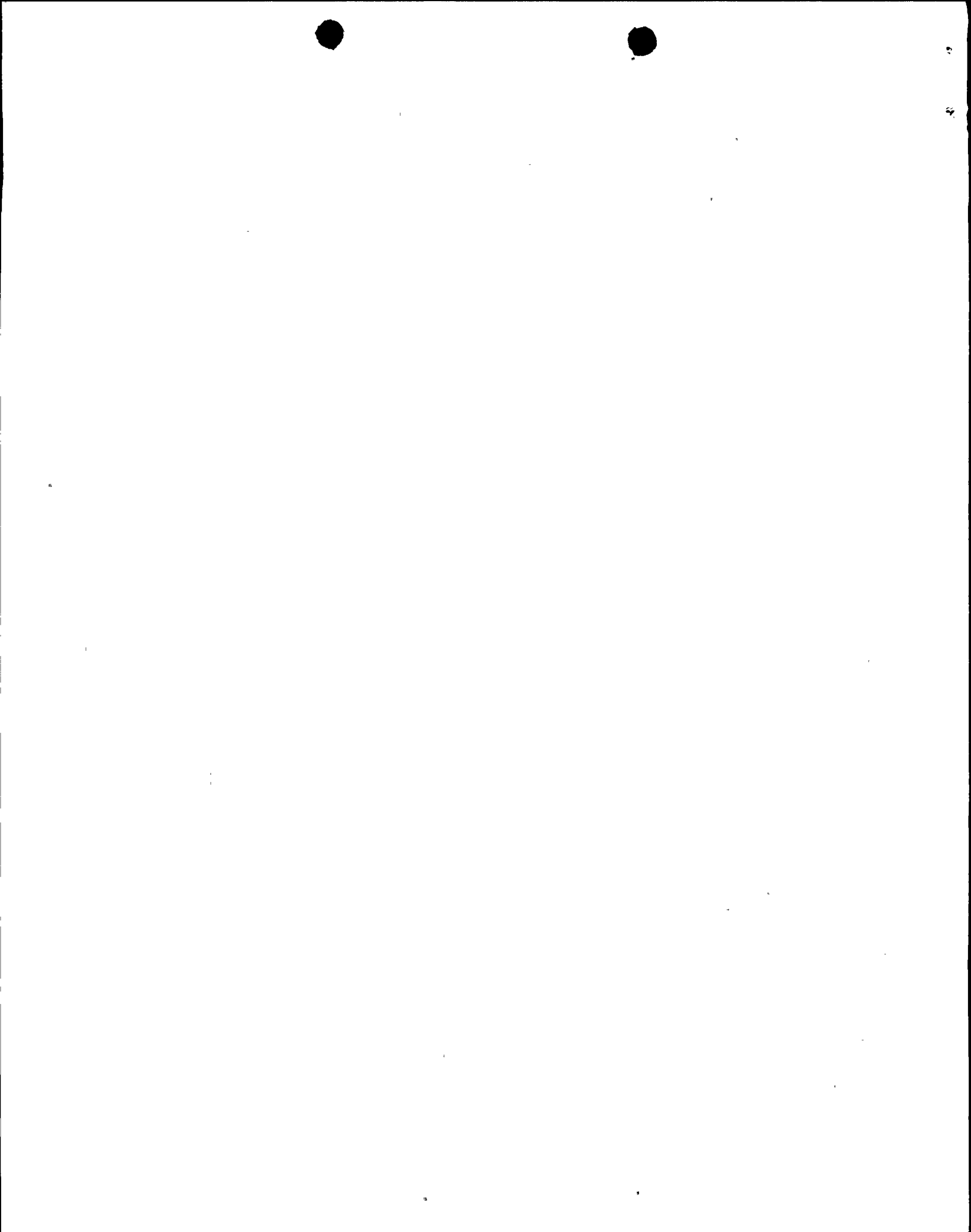
Occurrence Report No. 88-945 was initiated on July 7, 1988. A notification to the Nuclear Regulatory Commission Operations Center was made via the Emergency Notification System at 1800 hours on July 7, 1988, in accordance with 10 CFR 50.36(c)(2). This event is also reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications."

There are no adverse safety consequences as a result of this event. The existence of the inboard MSIV scram initiation setpoint at 12.5% is a condition which was analyzed for in the FSAR. Per Tech. Spec. bases for sections 3.6.2 and 4.6.2, the plus or minus 2.5% deviation has a negligible effect on the initiation of the scram on MSIV closure. The limit switch setpoint does not affect the operability of the MSIVs. Between the 1984 and 1988 refueling outages when the inboard MSIV limit switches were set at 12.5%, the outboard MSIV limit switches were set in accordance with Tech. Spec. requirements by the I&C Department. The outboard MSIVs would have been available to prevent an unanalyzed event from occurring.

CORRECTIVE ACTIONS

As an initial corrective action, an Occurrence Report was initiated to identify the Tech. Spec. violation. A review of the switch settings from the cyclic surveillance conducted June 22 and 23, 1988, verified that the as-left limit switch setpoints were less than or equal to 10%, as required by Tech. Specs. A Temporary Change Notice to the current electrical surveillance procedure NI-ESP-001-RF130, Revision 1, was issued on July 12, 1988, to conform to the required Tech. Spec. position switch limits. Setpoints in all other NMP1 electrical surveillance procedures were verified to be in accordance with Tech. Specs. Setpoints in the I&C surveillance procedures for calibration of the limit switches on the outboard MSIVs and Turbine Stop valves were also verified to be in accordance with Tech. Specs. Setpoints in the procedure for calibration of the MSIV closure limit switches at Nine Mile Point Unit 2 were also verified to be in accordance with their Tech. Specs.

A Lessons Learned transmittal will be issued to all station departments that provide technical review of procedures. The transmittal will discuss the need to provide adequate procedural reviews and to caution reviewers as to the consequences of assuming the correctness of existing procedures merely because the prior revision of the procedure had already been approved. The problem of taking Tech. Spec. statements out of context will also be discussed. Additionally, it will be noted that although cross-disciplinary reviewers are selected by the procedure ownership department, AP-2.0, section 6.1 allows the cross disciplinary reviewer to designate additional reviewers if desired. Therefore, if a reviewer is unfamiliar with, for example, Tech. Specs., an additional reviewer from the Licensing Department or a Senior Reactor Operator-trained individual may be designated.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

CORRECTIVE ACTIONS (Cont'd)

An additional action that will be taken to prevent recurrence is a review of current Maintenance and I&C Department procedure writing guides. The review will be conducted to ensure that Tech. Spec. setpoint issues are adequately addressed.

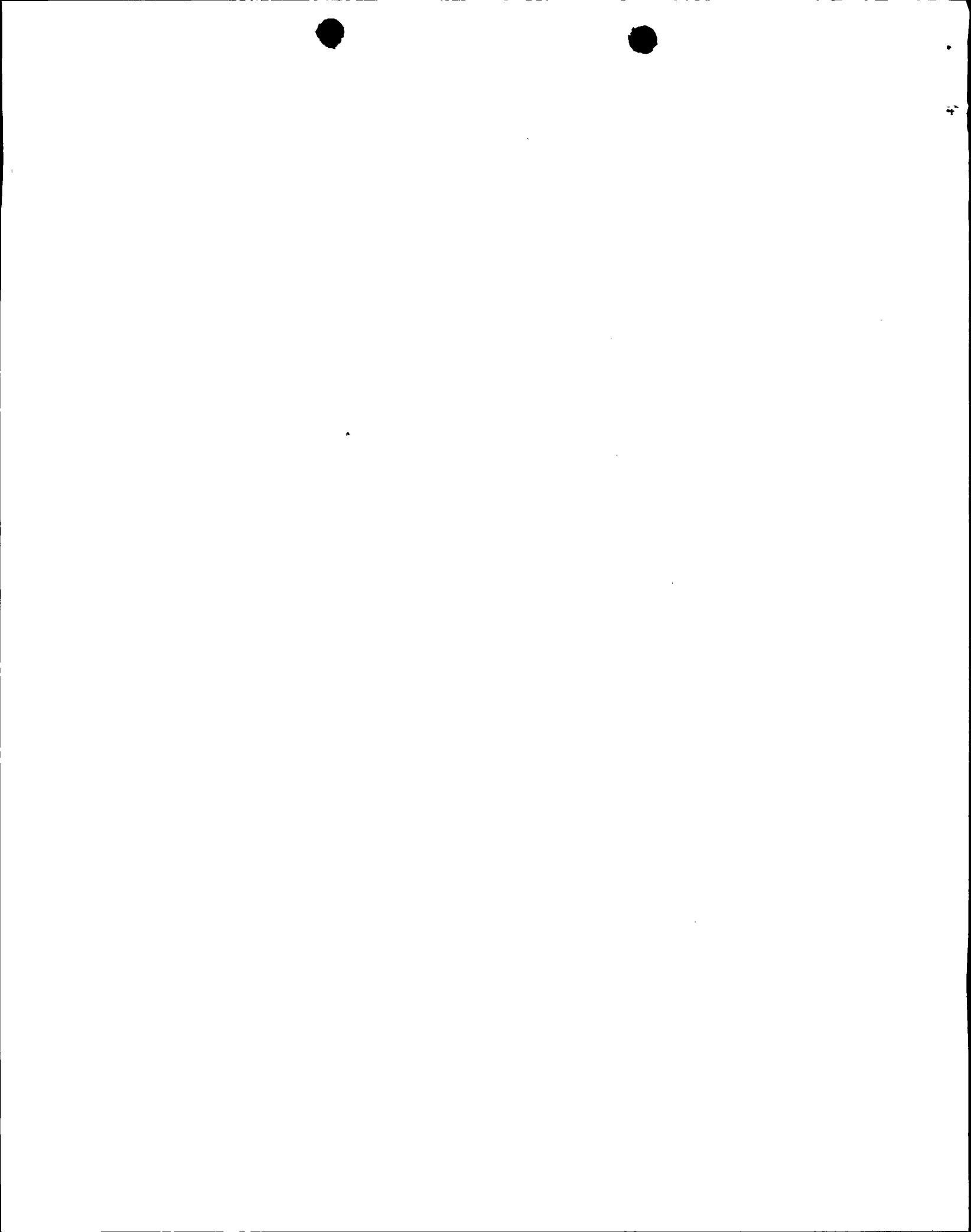
In response to Problem Report No. 27, regarding the generation of half scrams while performing the MSIV 7% closure test, Engineering will issue a modification request to replace the inboard MSIV actuator motors with units having an electric brake that meets applicable Equipment Qualification requirements.

ADDITIONAL INFORMATION

The Inboard MSIV 10% closure limit switches were not considered failed components. The switches were merely calibrated slightly in excess of the required limit. The switches could have performed their safety function at the limit at which they were set. The following is a list of pertinent component information:

<u>COMPONENT</u>	<u>MANUF. CODE</u>	<u>MODEL NO.</u>	<u>IEEE 803 EIS FUNCTION</u>	<u>IEEE 805 SYSTEM ID</u>
Position Switch	N007	EA740	33	SB

No LER's concerning previous similar events have been written.



August 5, 1988

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

RE: Docket No. 50-220
LER 88-16

Gentlemen:


In accordance with 10 CFR 50.73, we hereby submit the following Licensee Event Report:

LER 88-16 Which is being submitted in accordance with 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications;"

The 10 CFR 50.36 report was made at 1800 hours on July 7, 1988.

This report was completed in the format designated in NUREG-1022, Supplement 2, dated September 1985.

Very truly yours,


James L. Willis
General Superintendent
Nuclear Generation

JLW/lrs

Attachment

cc: William T. Russell
Regional Administrator

IE22
1/1

