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50-251

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DATE OF DOCUMENT
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10-4-77

TO: G Lear

FROM: Florida Power & Light Co
Miami, Fla
R E Uhrig

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INPUT FORM

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DESCRIPTION
lp

PLANT NAME: Turkey Point #4

10-4-77. ehf

ENCLOSURE
Report of abnormal indications from metal impact monitoring system....Sept 16-18, 1977
.....

3p

3 cys ENCL Rec'd *

SAFETY FOR ACTION/INFORMATION

BRANCH CHIEF: (7) **LEAR**

INTERNAL DISTRIBUTION

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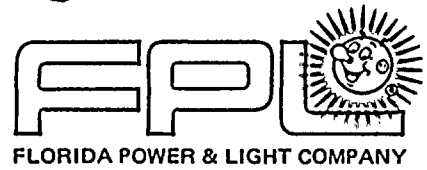
CONTROL NUMBER

77270241



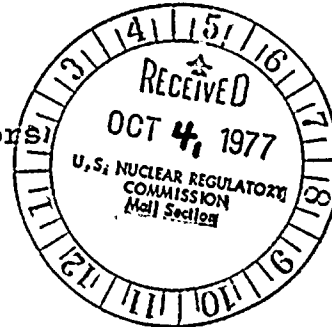
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REGULATORY DOCKET FILE COPY



September 30, 1977
L-77-307

Office of Nuclear Reactor Regulation
Attention: Mr. George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555




Re: Turkey Point Unit 4
Docket No. 50-251
Metal Impact Monitoring System

Dear Mr. Lear:

The Order for Modification of License for Turkey Point Unit No. 4, dated August 2, 1977, amended paragraph 3.D of License DPR-41. Pursuant to the requirements of this Order, Florida Power & Light Company is forwarding the attached evaluation "Report of Abnormal Indications from Metal Impact Monitoring System, Turkey Point Unit No. 4, September 16-18, 1977". The conclusions stated in the report are that the abnormal indications were false alarms and thus are not a safety consideration.

Very truly yours,


Robert E. Uhrig
Vice President

REU:WAK:dt

Attachment

cc: Mr. James P. O'Reilly, Region II
Robert Lowenstein, Esquire

772770241



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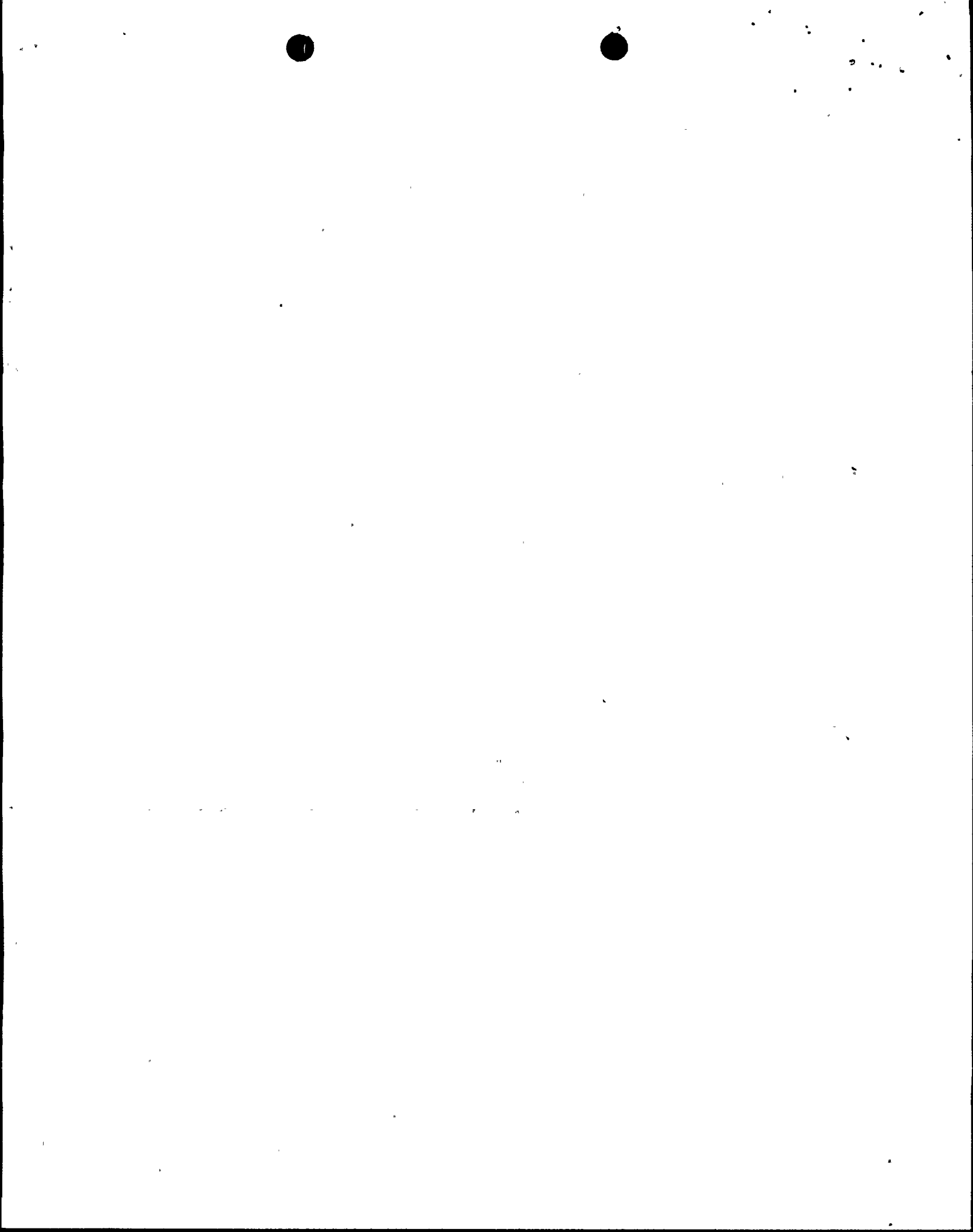
REPORT OF ABNORMAL INDICATIONS
FROM METAL IMPACT MONITORING SYSTEM
TURKEY POINT UNIT NO. 4
SEPTEMBER 16-18, 1977

1. The Metal Impact Monitoring System (MIMS) generated numerous alarms between 7:30 P.M. Friday, September 16 and 3:30 A.M. Sunday, September 18. See Attachment 1 for details.
2. During the periods of MIMS alarms, the control room operators listened to the MIMS loudspeaker in the control room and heard no unusual noises. The normal flow and background noises were the only sounds present. Therefore, no action was taken since the alarms appeared to be false.
3. On Tuesday, September 20, a stage by stage check of the MIMS electronics was begun. Refer to Attachment 2, a block diagram of the MIM System. Stage 6, the tuneable filter, was found to be oscillating. With no input, it was producing 300 millivolts of output. The integrated circuit amplifier (type 741) for this stage was replaced. This stopped the oscillations.
4. On Wednesday, September 21, the check of the MIMS was completed. No further problems were found. Live signals from the transducers were monitored and the alarm setpoints were checked. The false alarms which occurred over the weekend are attributed to oscillations generated in stage 6. These were interpreted as metal impacts by the following stages, and alarms were generated.
5. As a result of this occurrence, the following actions are being undertaken:
 - a. The MIMS channel which is being monitored for alarms will be the same channel selected for the control room speaker (by procedure).
 - b. All three MIMS channels will be operated at 10 G full scale sensitivity (by procedure).
 - c. A procedure which the control room operators can use for verifying the validity of MIMS alarms is being written.
 - d. The weekly check of the MIMS transducer output will be expanded to include a check for operability of the MIMS electronics.
 - e. A procedure for normal operation of the MIMS is being written which will include Items a, b, and d.

ATTACHMENT 1

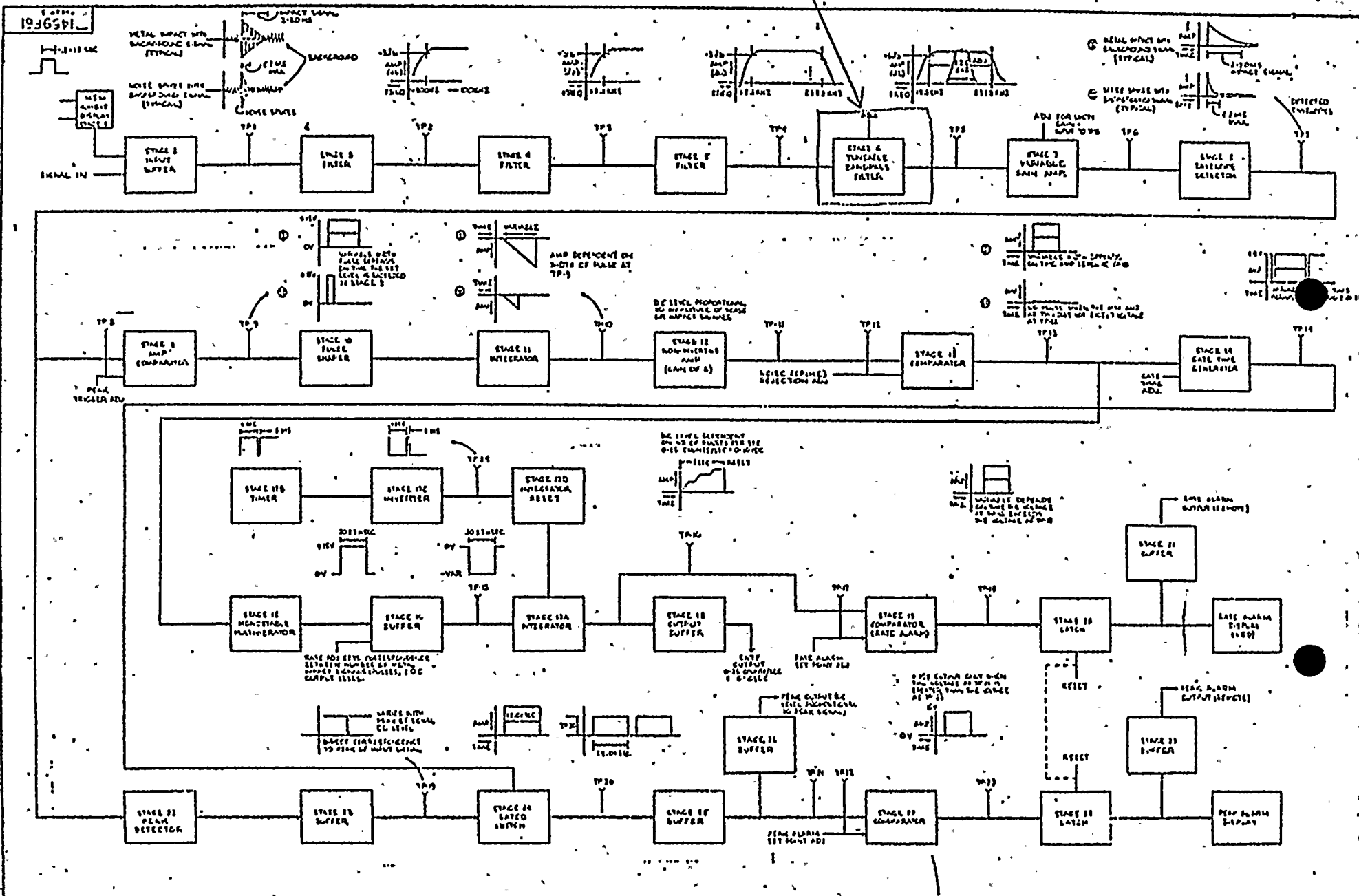
MIM System created numerous alarms over the period 7:30 P.M., Friday, September 16, until 3:30 P.M., Sunday, September 18.

<u>Time</u>	<u>Description</u>
7:30 P.M., Friday ↕ 3:00 A.M., Saturday	Random single events, about two per hour. Amplitude about 4 to 7 volts. (2 - 3 times size of impacts detected on initial pump runs.)
5:00 A.M., Saturday 7:00 A.M., Saturday AND 8:20 A.M., Saturday 10:00 A.M., Saturday	Random events, about 25 per hour. Mostly single events but some indicated full scale (10 per second). Amplitude 8 to 10 volts. (Full scale is 10 volts.)
Noon, Saturday	About 7 events in 12 minutes. Amplitude about 8 volts. Mostly single events.
6:30 P.M., Saturday 9:30 P.M., Saturday	Numerous events, from 6½ volts to offscale. Rate from single to offscale. Stopped abruptly at 9:25 P.M.
3:15 to 3:30 A.M., Sunday	≈5 more events, mostly large and high rate. Nearly offscale.
After 3:30 A.M., Sunday, no further indications of events.	
Operators report that speaker in control room sounded as always - flow noise plus background.	



BLOCK DIAGRAM OF MIMS (EXCLUDING SENSORS)

Oscillating



REVISIONS		DATE	
1	INITIAL	10/1/68	10/1/68
2	REVISED	10/1/68	10/1/68
3	REVISED	10/1/68	10/1/68
4	REVISED	10/1/68	10/1/68
5	REVISED	10/1/68	10/1/68
6	REVISED	10/1/68	10/1/68
7	REVISED	10/1/68	10/1/68
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