

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

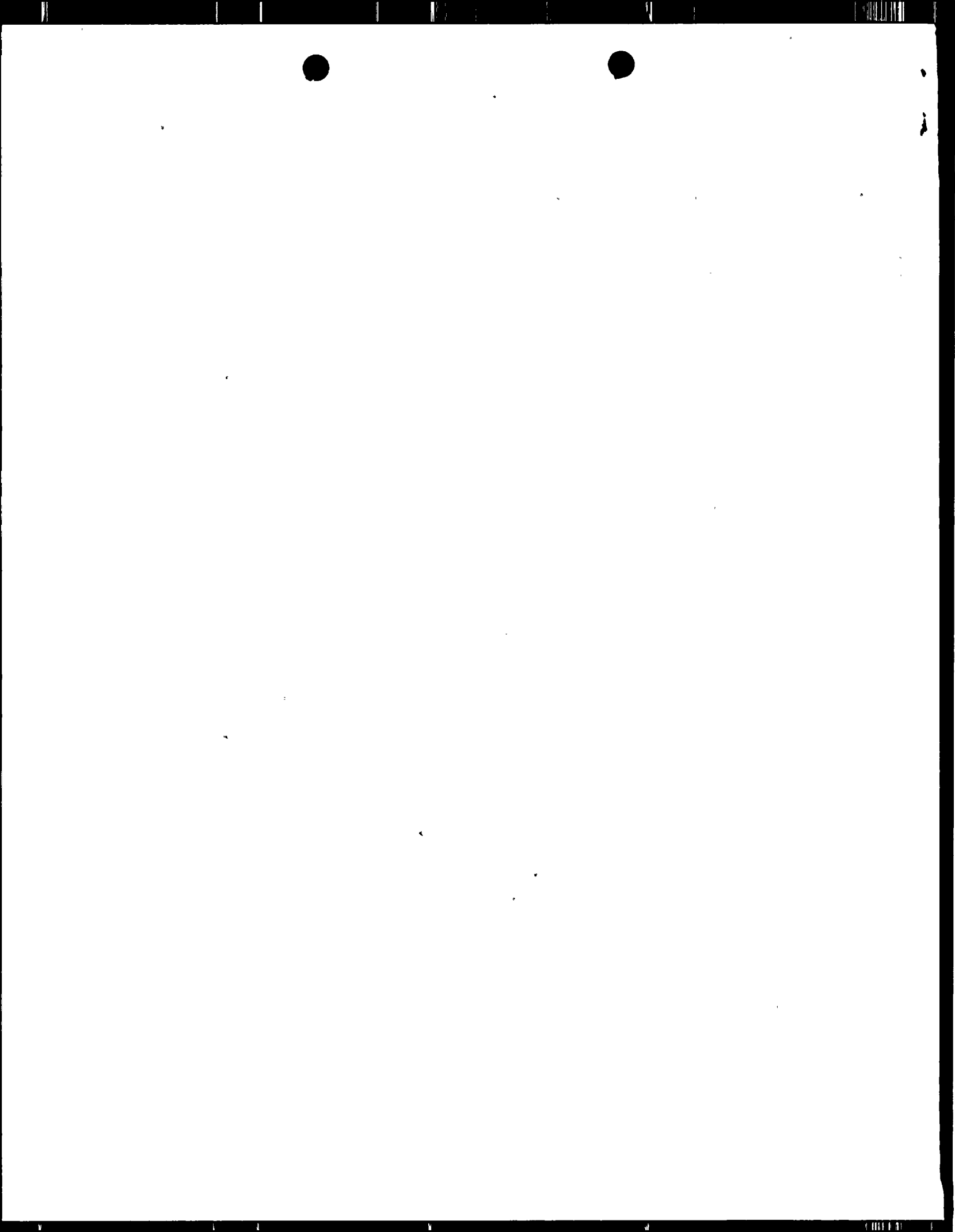
ACCESSION NBR: 8709170403 DOC. DATE: 87/09/11 NOTARIZED: NO DOCKET #
 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
 AUTH. NAME: AUTHORITY AFFILIATION
 BAKER, K. R. Indiana & Michigan Power Co.
 SMITH, W. G. Indiana & Michigan Power Co.
 RECIP. NAME: RECIPIENT AFFILIATION

SUBJECT: LER 87-015-00: on 870809, refueling manipulator crane limiting condition for operating not verified due to use of inadequately calibr instrument. Procedure revised to require acceptable calibr of load cells before refuel. W/870911 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD3-3 LA	1 1	PD3-3 PD	1 1
	WIGGINGTON, D	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	DEDRO	1 1	NRR/DEST/ADS	1 0
	NRR/DEST/CEB	1 1	NRR/DEST/ELB	1 1
	NRR/DEST/ICSB	1 1	NRR/DEST/MEB	1 1
	NRR/DEST/MTB	1 1	NRR/DEST/PSB	1 1
	NRR/DEST/RSB	1 1	NRR/DEST/SGB	1 1
	NRR/DLPQ/HFB	1 1	NRR/DLPQ/GAB	1 1
	NRR/DOEA/EAB	1 1	NRR/DREP/RAB	1 1
	NRR/DREP/RPB	2 2	NRR/PMAS/ILRB	1 1
	REG. FILE 02	1 1	RES DEPY GI	1 1
	RES TELFORD, J	1 1	RES/DE/EIB	1 1
	RGN3 FILE 01	1 1		
EXTERNAL:	EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
	NSIC HARRIS, J	1 1	NSIC MAYS, G	1 1



LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) D. C. Cook Nuclear Plant - Unit One										DOCKET NUMBER (2) 0 5 0 0 0 3 1 5 1 OF 0 4										PAGE (3) 1 OF 4										
TITLE (4) Refueling Manipulator Crane Limiting Conditions for Operation Not Verified Due to Use of an Inadequately Calibrated Instrument																														
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						DOCKET NUMBER(S)															
0	8	1	3	8	7	8	7	0	1	5	8	7	0	9	1	1	8	7	D. C. Cook - Unit Two						0 5 0 0 0 3 1 6					
OPERATING MODE (9) 6			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)					50.36(c)(1)					50.73(a)(2)(v)					73.71(c)												
			20.406(a)(1)(ii)					50.36(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)					50.73(a)(2)(vii)(A)																	
			20.406(a)(1)(iv)					50.73(a)(2)(iii)					50.73(a)(2)(vii)(B)																	
			20.406(a)(1)(v)					50.73(a)(2)(iii)					50.73(a)(2)(x)																	
LICENSEE CONTACT FOR THIS LER (12)																														
NAME K. R. Baker - Operations Department Superintendent															TELEPHONE NUMBER 6 1 6 4 6 5 - 5 9 0 1															
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																														
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																				
X	C F	L D C	- N A -	N																										
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR											
YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO <input type="checkbox"/>																														

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

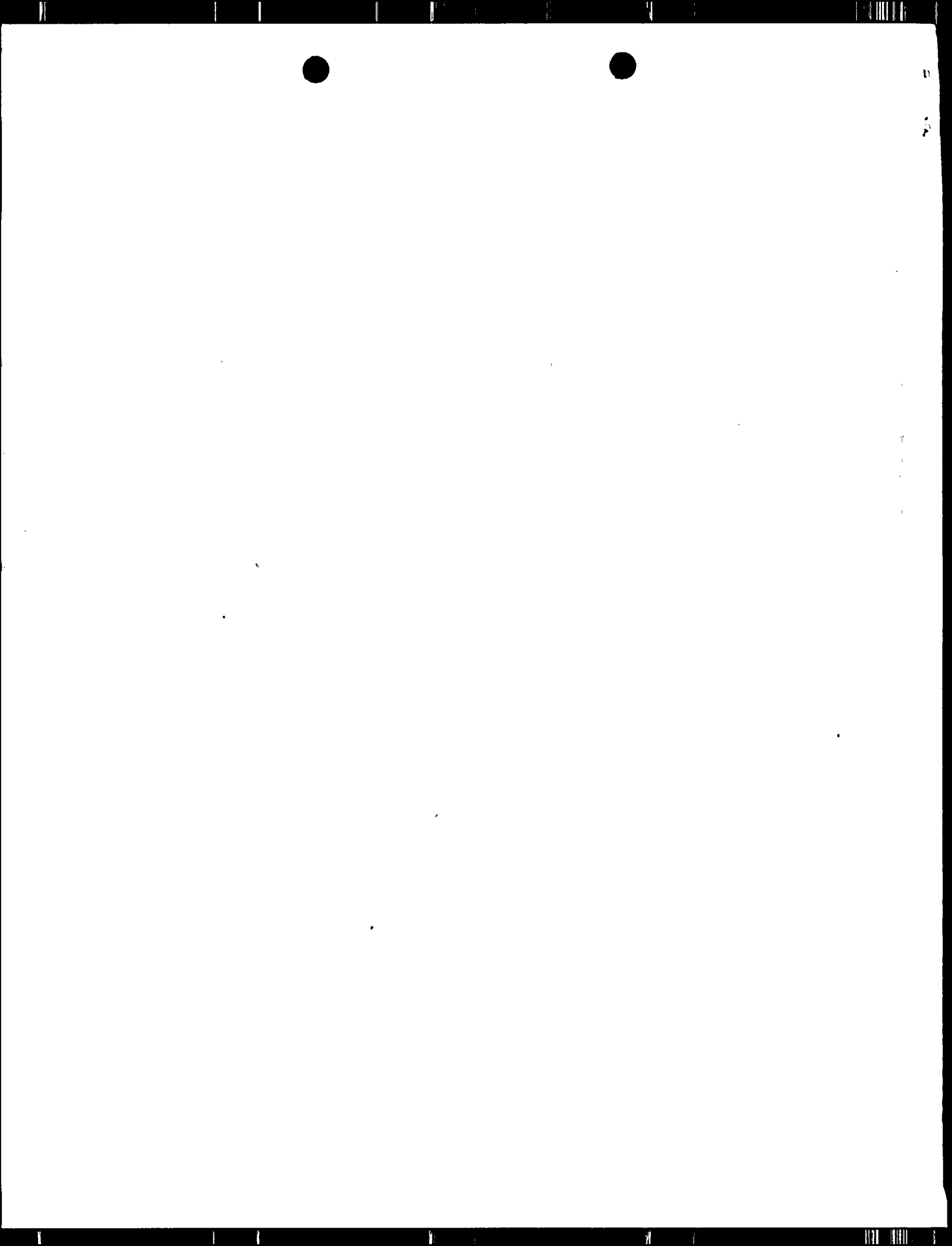
On August 9, 1987, during fuel movement in Unit One, a malfunction of the refueling Manipulator Crane load cell led to the discovery that the load cell had not been adequately calibrated. Further investigation determined that neither the Unit One or Unit Two load cell had been adequately calibrated since the initial calibration. This event was determined to be reportable on August 13, 1987.

Technical Specification 3.9.6 requires a minimum crane capacity of 3250 pounds and an overload cutoff limit of 2850 pounds or less. Since the instruments used to prove operability were not adequately calibrated, compliance with the limiting conditions for operation was not adequately demonstrated.

The load cells were not adequately calibrated due to not performing what is now considered to be an acceptable calibration.

Fuel movement was re-started after the Unit Two load cell was properly calibrated and installed in Unit One following a satisfactory manipulator crane surveillance test. Procedure changes will be made to require an acceptable calibration of the load cells prior to each refueling. Procedure changes will also be made to establish conservative surveillance acceptance criteria to allow for instrument tolerances.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
D. C. Cook Nuclear - Unit One	0 5 0 0 0 3 1 5	8 7	— 0 1 5	— 0 0	0 2	OF	0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Conditions Prior to Event

Unit One in Mode 6 (Refueling).
Unit Two at 40 percent reactor thermal power.

Description of Event

On August 9, 1987, erratic indications on the refueling manipulator crane (EIIS/CF-FHM) load cell (EIIS/CF-LDC) were observed. During the investigation of this problem it was found that the load cell had not been adequately calibrated. Further investigation determined that neither the Unit One or Unit Two refueling manipulator crane load cell had been adequately calibrated since the initial calibration. Fuel movement was stopped until a properly calibrated instrument was obtained. This event was determined to be reportable on August 13, 1987.

The Technical Specification surveillance requirements (4.9.6.1) for the manipulator crane require verification of 3250 pound minimum capacity and an overload cutoff limit of ≤ 2850 pounds. Since the load cells used to prove operability were not adequately calibrated, compliance with the limiting conditions for operation has not previously been demonstrated.

There were no inoperable structures, components or systems that contributed to this event.

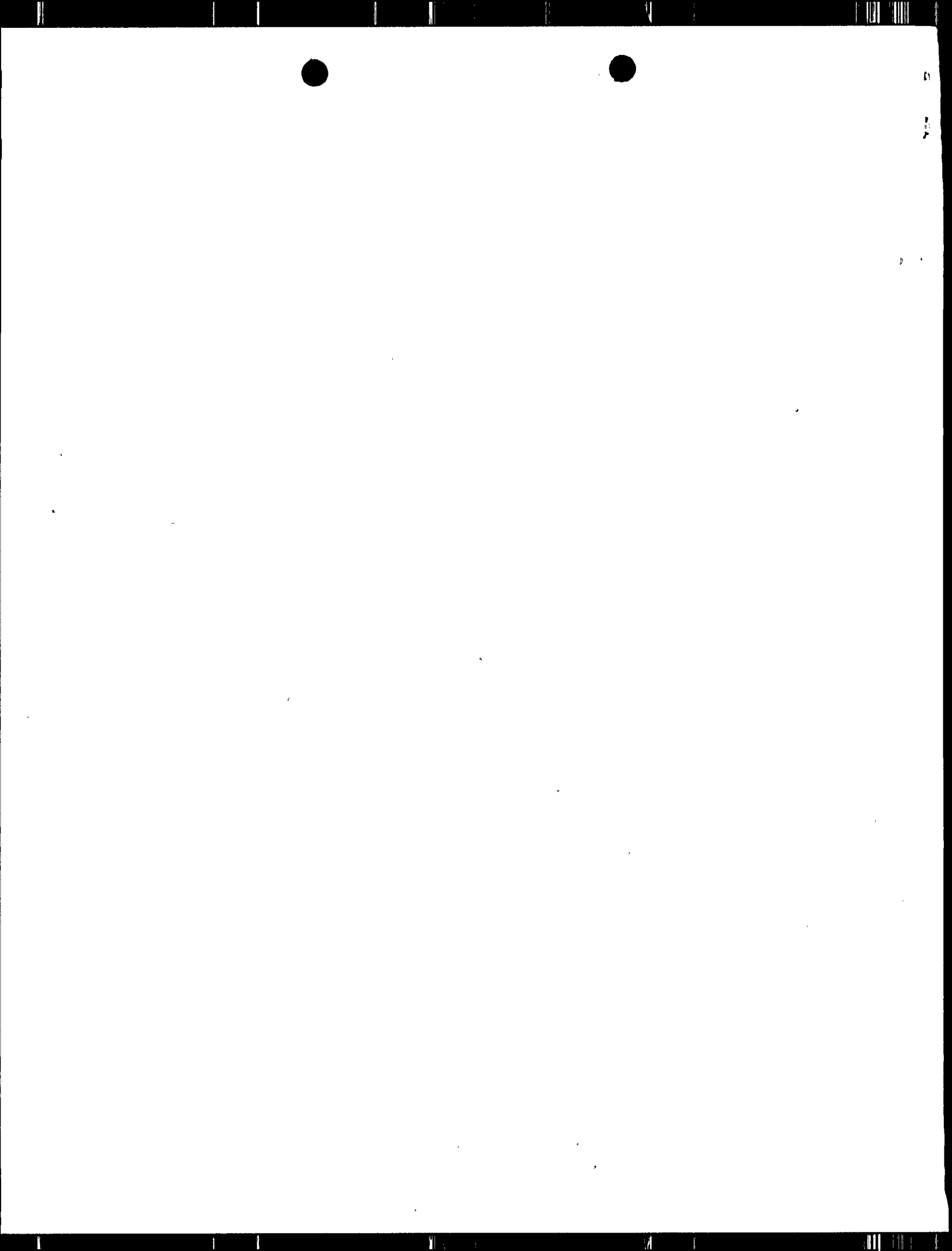
Cause of Event

As part of the surveillance procedure for the refueling manipulator crane, the refueling mast is weighed to check the accuracy of the load cell. In the past this was considered an acceptable check of the load cell's performance. During the investigation of the load cell failure, it was determined that this one point calibration was not adequate.

Analysis of Event

This event is considered reportable under the criteria of 10 CFR 50.73(a) (2)(1).

As found data for the Unit One load cell was not obtainable due to the failure mode of the instrument.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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D. C. Cook Nuclear Plant - Unit One	0 5 0 0 0 3 1 5	8 7	— 0 1 5	— 0 0	0 3	OF	0 4

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

For the overload cutoff limit, the refueling procedure requires that the overload be set at approximately 200 pounds above the combined weight of the manipulator mast and a fuel assembly with a rod cluster assembly. This results in a conservative setting of approximately 200 pounds below the Technical Specification limit of ≤ 2850 pounds.

As part of the manipulator crane test the load cell is checked with only the weight of the mast. Since the weight of the mast is known, this serves as a check of the load cell's accuracy on the lower end of the scale. This check has typically found the load cell to be reasonably accurate. Therefore it is felt, that with the conservative load cutoff setting and the demonstrated accuracy, a load of >2850 pounds has not been exerted when pulling a fuel assembly.

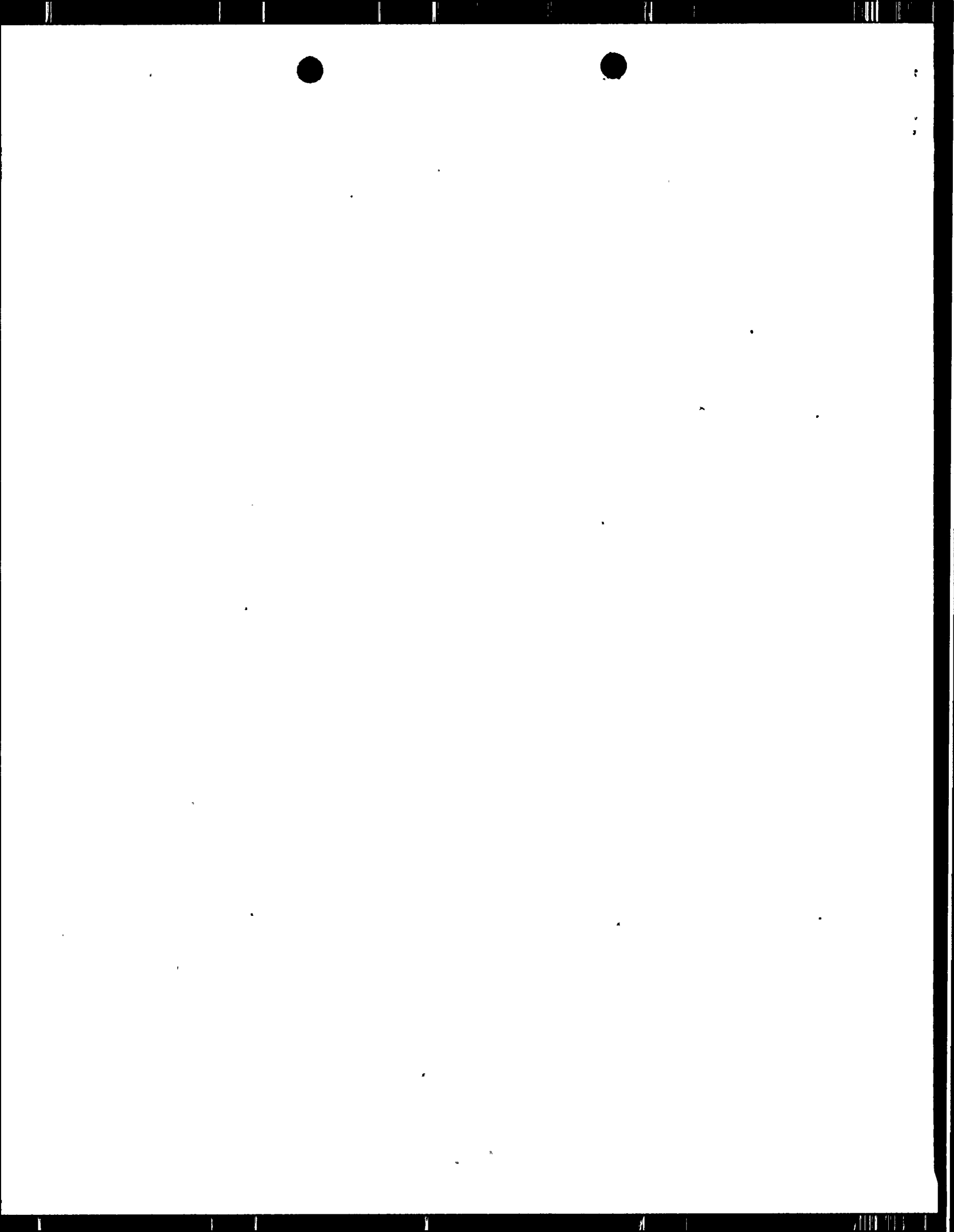
For the minimum capacity requirement, the manipulator crane surveillance test requires a load check of 3250 pounds which is the Technical Specification minimum limit. For this requirement, if the load cell was indicating high; then the actual load would be less than the 3250 pound requirement.

For several refuelings the indicated load, when weighing the mast alone, was higher than the actual weight of the mast. For those occasions it can be concluded that the manipulator crane was not load tested to 3250 pounds as required by Technical Specifications. The largest discrepancy occurred in April, 1984, on Unit Two when the mast alone indicated 938 pounds and the load test was done to 3260 pounds. This gave an actual load test of 3172 pounds. However the manipulator crane is rated at 6000 pounds capacity and there have been no problems with adequate crane capacity.

Based on the overload cutoff being conservatively set below the Technical Specification limit and a worst case minimum capacity load test of 3172 pounds; it is concluded that this condition did not constitute a significant safety problem as defined by 10 CFR 50.59.

Corrective Action

- 1) The Unit Two load cell was calibrated by checking the indicated weight against known weights at six different points in the operating band. This load cell was then used on the Unit One manipulator crane in order to allow for repairs of the Unit One load cell. The manipulator crane surveillance was then performed with satisfactory results and fuel movement was re-started.
- 2) Procedure changes will be made prior to the next refueling in the respective units, which will provide for an acceptable calibration of the load cells.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

- 3) The surveillance procedure for the refueling manipulator crane will be revised prior to the next refueling in order to give conservative acceptance criteria which will allow for instrument tolerances.

Failed Component Identification

Unit 1 Refueling Manipulator Crane Load Cell

Plant Designation: Manipulator Crane Load Cell

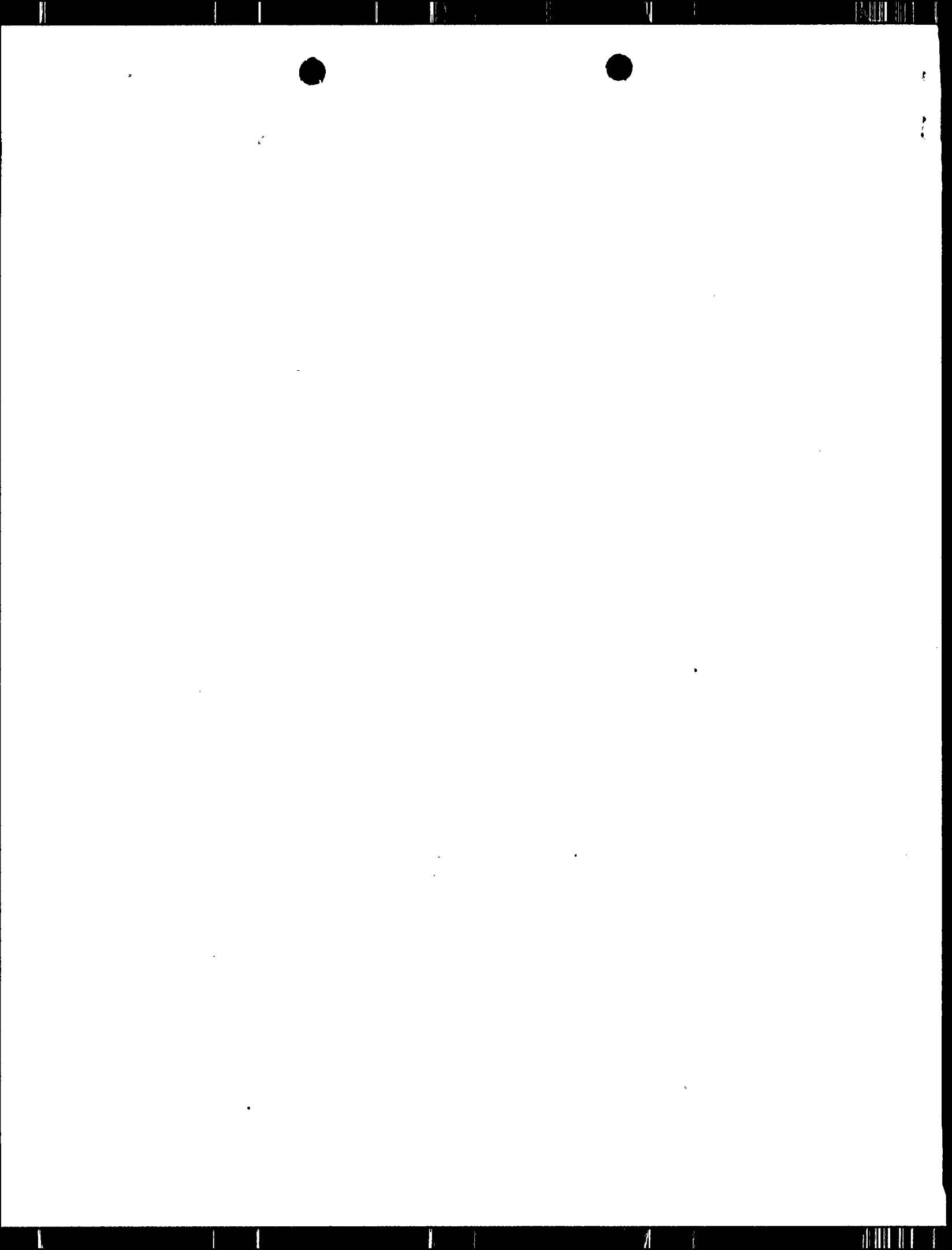
Manufacturer: W. C. Dillon and Company, Inc.

Model: ATN-1E

EIIS Code: DF-LDC

Previous Similar Events

None



Indiana Michigan
Power Company
Cook Nuclear Plant
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Bridgman, MI 49106
616 465 5901



September 11, 1987

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

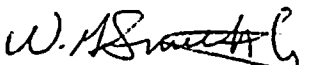
Operating License DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73
entitled Licensee Event Reporting System, the following
report is being submitted:

87-015-00

Sincerely,


W. G. Smith, Jr.
Plant Manager

/afh

Attachment

cc: John E. Dolan
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M. P. Alexich
R. F. Kroeger
H. B. Brugger
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