

TERA



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

DECEMBER 9 8 1979

Docket No. 50-286

LICENSEE: Power Authority of the State of New York (PASNY)
FACILITY: Indian Point, Unit No. 3
SUBJECT: SUMMARY OF MEETING ON OCTOBER 25, 1979 TO DISCUSS STEAM
GENERATOR INSPECTION

A meeting was held on October 25, 1979 between representatives of the Power Authority of the State of New York (the licensee), Westinghouse, and the NRC. A list of attendees is attached. The meeting was held to discuss the results of the recent steam generator inspection conducted at Indian Point, Unit 3.

The inspection indicated cracking of the support plates, hourglassing and, as categorized by Westinghouse, "extensive denting." Preliminary conclusions with supporting sketches, photos and tabulations are given in Attachment 2. Because of the evidence of hourglassing of the upper support plates, Westinghouse recommended plugging of all the tubes in Row 1 in all four steam generators. The licensee is following this recommendation, and is also plugging all tubes that did not pass a 610 mil probe. Results of the gauging are tabulated below.

Steam Generator	No. of Tubes Inspected	No. of Tubes Passing Probe of			
		720 mil	650 mil	610 mil	540 mil
31	488	243	5	2	0
32	495	254	15	2	0
33	682	267	19	9	1
34	497	219	18	3	1

The licensee experienced periods of high chloride intrusion during August and September 1979 which may have contributed to the denting. The licensee stated that a program of boron addition to the feedwater will be instituted in an effort to slow down the rate of denting.

The licensee proposed that inspection of all four steam generators be done at the next refueling outage, scheduled for April 1981.

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The NRC staff did not find this acceptable and requested that the licensee consider an earlier inspection of all steam generators. The licensee was also requested to submit an application for a license amendment concerning inspection of steam generators that follows the format of the Indian Point 2 license condition.

At the conclusion of the meeting the resolution of a date for the next inspections of all steam generators was left as an open action item as was the schedule for submittal of a request for license amendment dealing with steam generator inspections in light of the additional degradation reported at the meeting.



L. Olshan, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Attachments:

1. List of Attendees
2. Preliminary Conclusions

Meeting Summary for Power Authority of the State of New York (PASNY)

Docket Files

NRC PDR

Local PDR

ORR Reading

NRR Reading

H. Denton

E. Case

D. Eisenhut

R. Tedesco

G. Zech

B. Grimes

W. Gammill

L. Shao

J. Miller

R. Vollmer

T. J. Carter

A. Schwencer

D. Ziemann

P. Cneck

G. Lainas

D. Crutchfield

B. Grimes

T. Ippolito

R. Reid

V. Noonan

G. Knighton

D. Brinkman

Project Manager

OELD

OI&E (3)

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ACRS (16)

NRC Participants

NSIC

TERA

Licensee

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Attachment 1
List of Attendees

PASNY

J. F. Davis
R. L. Goyette
J. J. Kelly
S. Zulla

Westinghouse

C. Benton
C. W. Hirst
D. D. Malinowski

NRC

L. Frank
B. D. Liaw
R. A. McBrearty
E. L. Murphy
L. N. Olshan
J. Strosnider

9/28/79

S. ZULLA:

SUBJECT: PRELIMINARY CONCLUSIONS FROM
S/G SECONDARY SIDE INSPECTION

The preliminary conclusions resulting from the secondary side inspection of the Indian Point Unit 3 steam generator are as follows:

1. Flow slot closure (hourglassing) is evident in all steam generator at several support plates. Per the attached sheets the average closure based on the first two support plates is:

<u>S/G</u>	<u>Average Closure, Inches</u>
31	0.37
32	0.56
33	0.35
34	<u>0.22</u>

Overall Avg. 0.38

the greatest closure was calculated to be
1.34 inches.

9/27/79

2. Based on 12 months operation since the previous inspection, the average closure rate is approximately 33 mils / month. This is comparable to that found in steam generator with similar conditions.
3. At least three cracks were observed in each steam generator in the support plates.
4. In steam generators 33 and 34, flow slot closure in the fifth support plate was observed. Due to this, an unobstructed view of the sixth support plate could not be obtained. Enlargement of the photographs may result in a better view of the closure. The amount of closure in the fifth support plate was estimated to be about 0.2 inches.

Carl H. Bergman

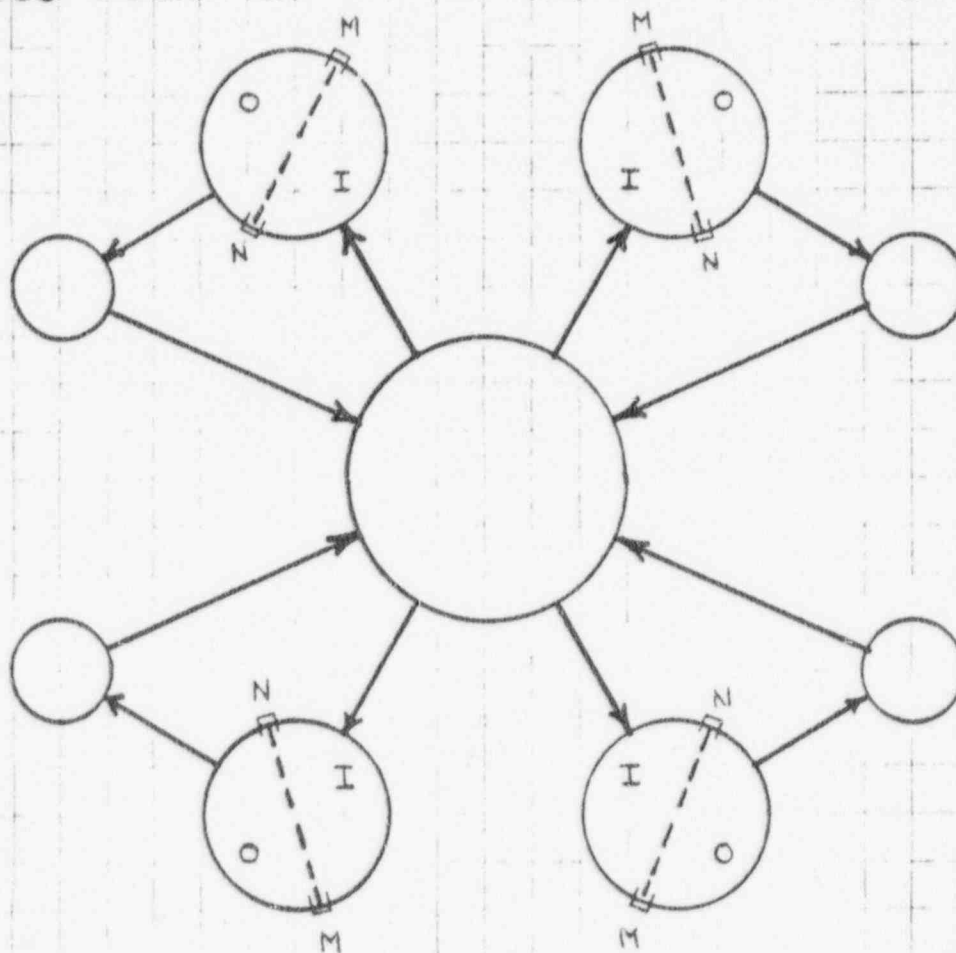
W-NSD

INDIAN POINT No. 3

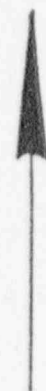
RCS-VIEW LOOKING DOWN

33

34

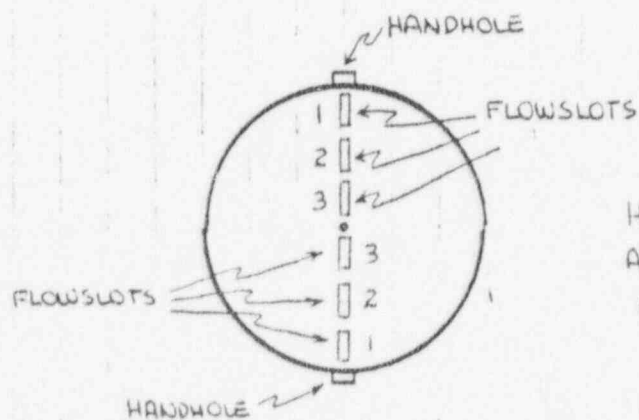


N



31

32



HANDHOLES ARE IDENTIFIED
AS BEING EITHER
1) BETWEEN THE MAJWAYS (M)
OR
2) BETWEEN THE NOZZLES (N)

INDIAN POINT #3 CALCULATED FLOW SLOT CLOSURE

S/G 31

<u>SIDE</u>	<u>FLOW SLOT</u>	<u>SUPPORT PLATE</u>	<u>RATIO</u>	<u>DISTANCE</u>	<u>CLOSURE</u>	<u>INDICATION OF CRACK</u>
N	1	1	11.5/13.2	2.39"	0.35"	
N	1	2	4.6/5.5	2.30"	0.45"	X X
N	2	1	11.0/12.0	2.52"	0.23"	
N	2	2	4.5/5.5	2.25"	0.50"	X
N	3	1	10.2/11.5	2.44"	0.31"	
N	3	2	4.5/5.5	2.25"	0.50"	
M	1	1	10.0/12.5	2.20"	0.55"	X
M	1	2	4.5/5.5	2.25"	0.50"	
M	2	1	11.5/12.5	2.53"	0.22"	
M	2	2	5.1/5.5	2.55"	0.20"	
M	3	1	10.2/12.3	2.28"	0.47"	
M	3	2	4.2/5.0	2.64"	0.11"	

RUG.
CLOSURE 0.37"

S/G 32

N	1	1	10.0/12.2	2.25"	0.50"	
N	1	2	4.5/5.5	2.25"	0.50"	
N	2	1	12.0/13.2	2.50"	0.25"	
N	2	2	4.5/5.5	2.25"	0.50"	X
N	3	1	10.2/11.5	2.44"	0.31"	
N	3	2	4.5/5.5	2.25"	0.50"	
M	1	1	10.5/12.0	2.41"	0.34"	
M	1	2	2.5/5.0	1.38"	1.38"	X X
M	2	1	10.5/13.2	2.19"	0.56"	X (M-1-3)
M	2	2	4.1/5.4	2.09"	0.66"	
M	3	1	10.0/12.2	2.25"	0.50"	X
M	3	2	3.9/5.2	2.06"	0.69"	

RUG.
CLOSURE 0.56"

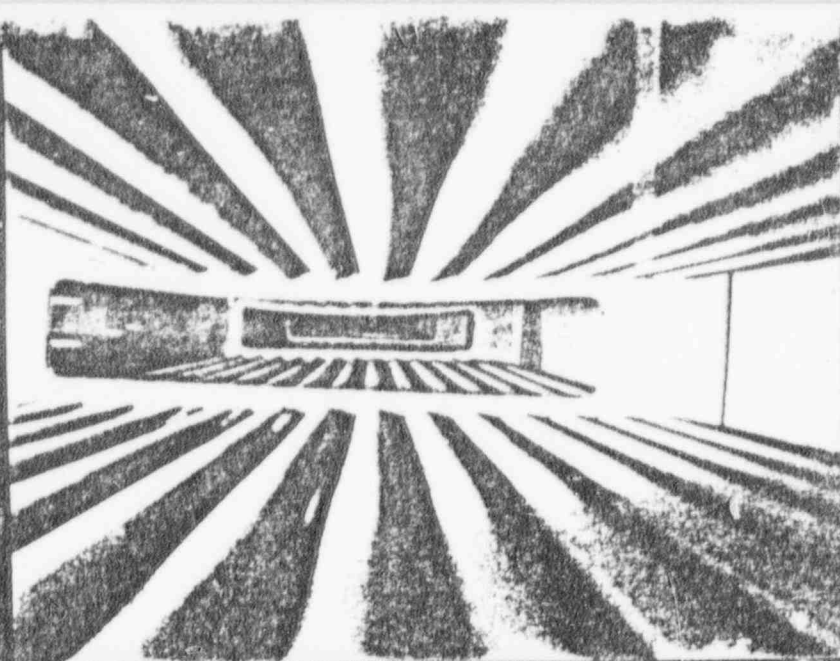
INDIAN POINT #3 CALCULATED FLOW SLOT CLOSURE (CONT.)

S/G 33

<u>SIDE</u>	<u>FLOW</u>	<u>SUPPORT</u>	<u>RATIO</u>	<u>DISTANCE</u>	<u>CLOSURE</u>	<u>INDICATION</u> <u>OF</u> <u>CRACK</u>
<u>SLOT</u>	<u>PLATE</u>					
N	1	1	11.8/12.5	2.60"	0.15"	
N	1	2	4.5/5.0	2.48"	0.27"	X
N	2	1	12.0/12.0	2.75"	0.00"	
N	2	2	5.0/5.0	2.75"	0.00"	
N	3	1	10.0/12.8	2.15"	0.60"	
N	3	2	—	—	—	
M	1	1	11.2/12.0	2.57"	0.18"	
M	1	2	3.1/5.0	1.71"	1.04"	XX
M	2	1	11.0/12.3	2.46"	0.27"	XX (M-1-3)
M	2	2	4.5/5.0	2.48"	0.27"	
M	3	1	10.0/12.1	2.29"	0.46"	
M	3	2	4.0/5.0	2.20"	0.55"	
AUG.					0.35"	
CLOSURE						

S/G 34

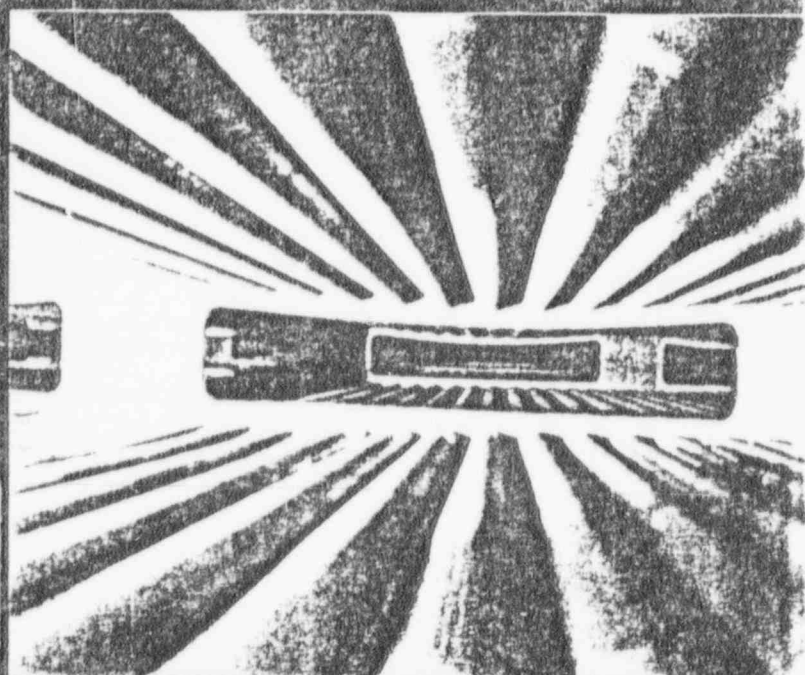
N	1	1	11.0/12.2	2.48"	0.27"	
N	1	2	5.0/5.3	2.59"	0.16"	XX
N	2	1	11.0/12.5	2.42"	0.33"	
N	2	2	5.0/5.5	2.50"	0.25"	
N	3	1	10.3/12.3	2.30"	0.45"	X
N	3	2	4.0/5.0	2.20"	0.55"	
M	1	1	11.2/12.7	2.43"	0.32"	
M	1	2	5.1/5.5	2.55"	0.20"	
M	2	1	12.5/12.5	2.75"	0.00"	
M	2	2	5.5/5.5	2.75"	0.00"	X (M-2-3)
M	3	1	13.0/13.0	2.75"	0.00"	
M	3	2	5.0/5.2	2.64"	0.11"	XX (M-3-4)
AUG.					0.22"	
CLOSURE						



"INT S/G31 9/79

NOZZLE SIDE FS1

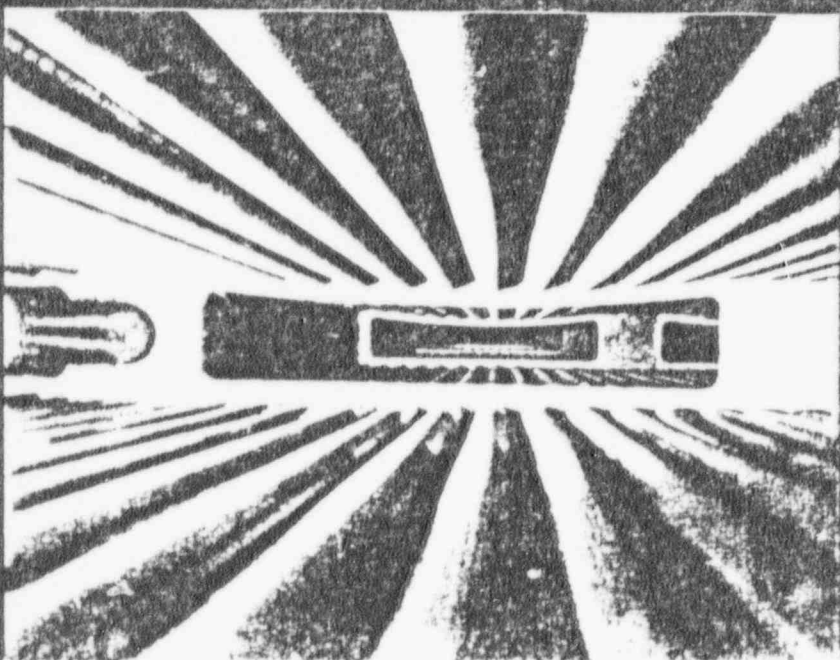
AFTER SLUDGE LANCE



INT S/G31 9/79"

NOZZLE SIDE FS2

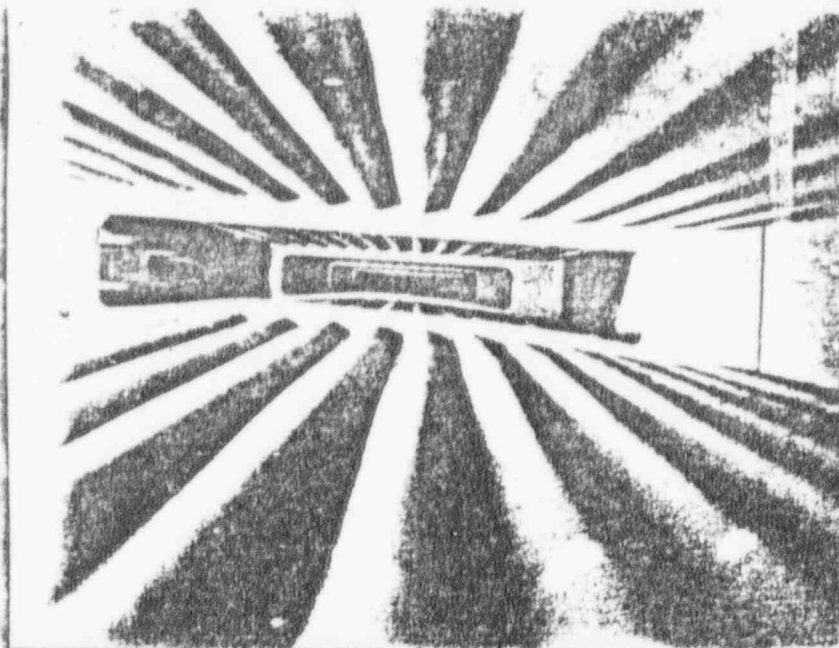
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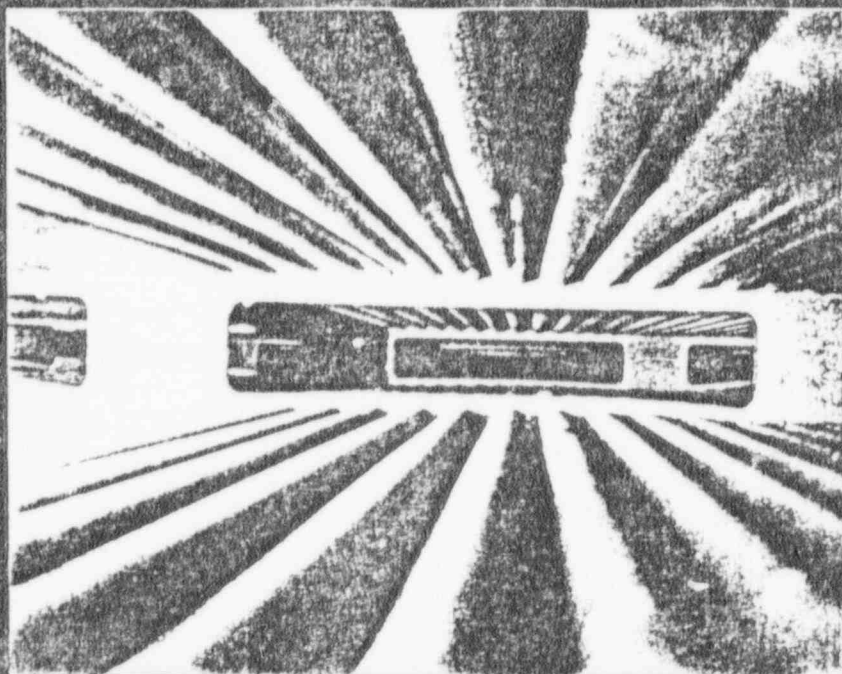
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NOZZLE SIDE FS3

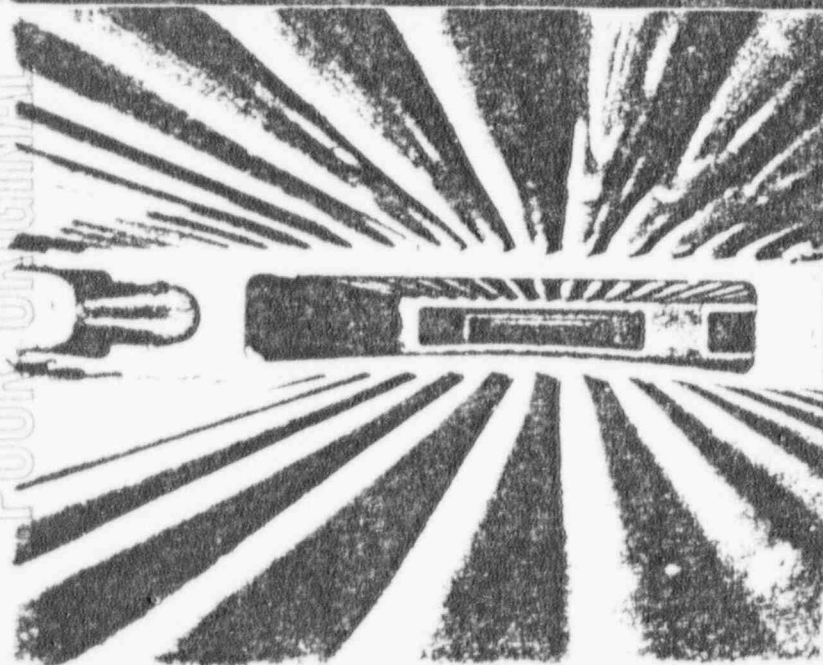
POOR ORIGINAL



INT S/G 31 9/79
MANWAY SIDE FS1
H AFTER SLUDGE LANCE

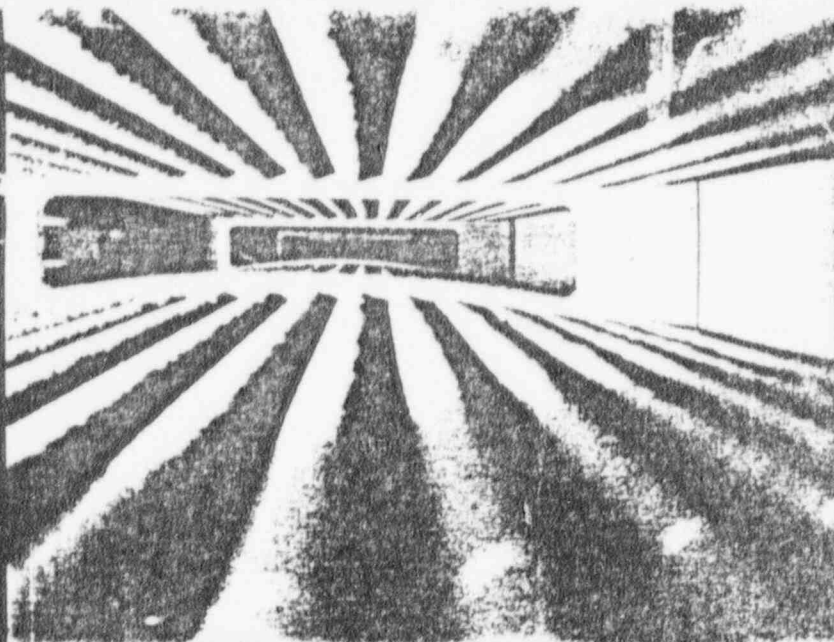


INT S/G 31 9/79
MANWAY SIDE FS2
AFTER SLUDGE LANCE H



INT S/G 31 9/79
MANWAY SIDE FS3
H AFTER SLUDGE LANCE

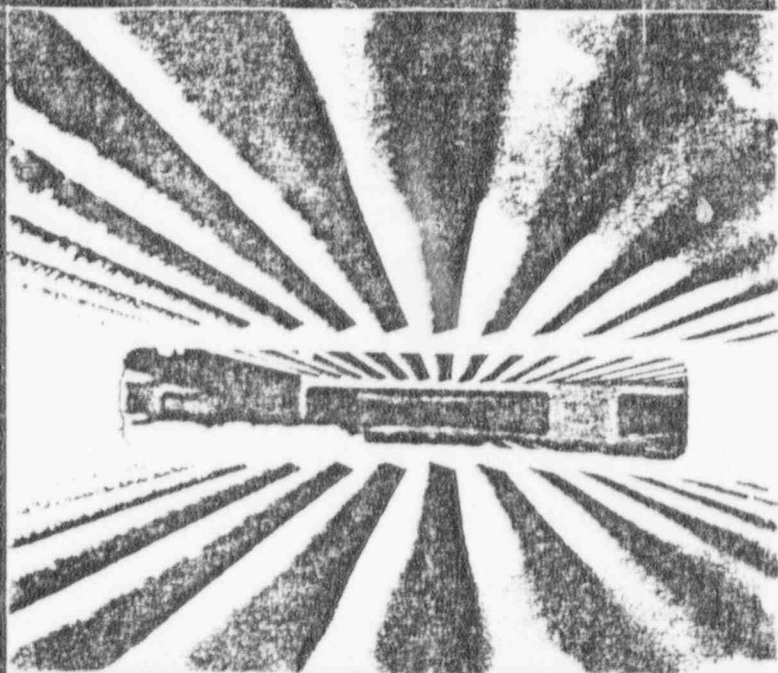
POOR ORIGINAL



C INT S/G 32 9/79

NOZZLE SIDE FS1

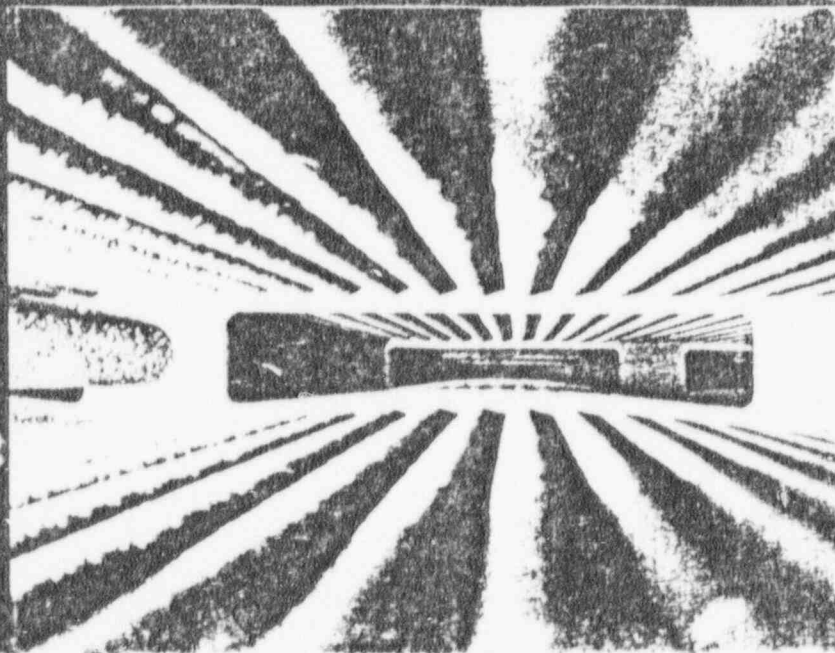
H BEFORE SLUDGE LANCE



INT S/G 32 9/79 C

NOZZLE SIDE FS2

H BEFORE SLUDGE LANCE

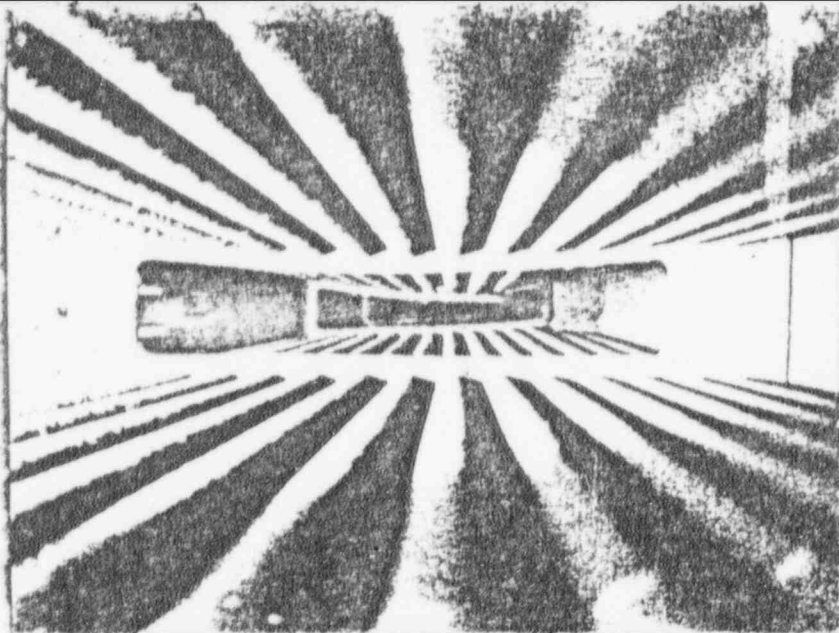


INT S/G 32 9/79

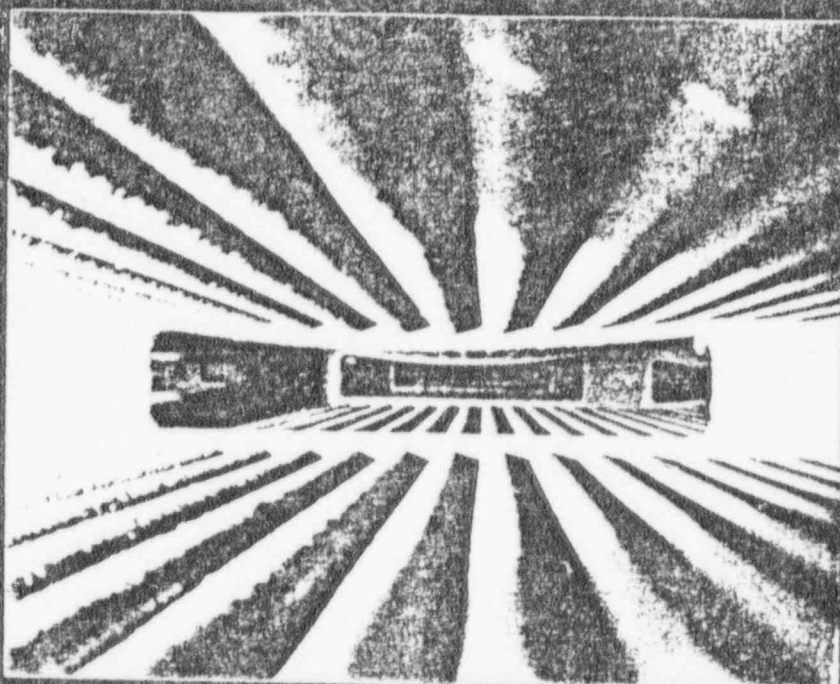
POOR ORIGINAL

NOZZLE SIDE FS3

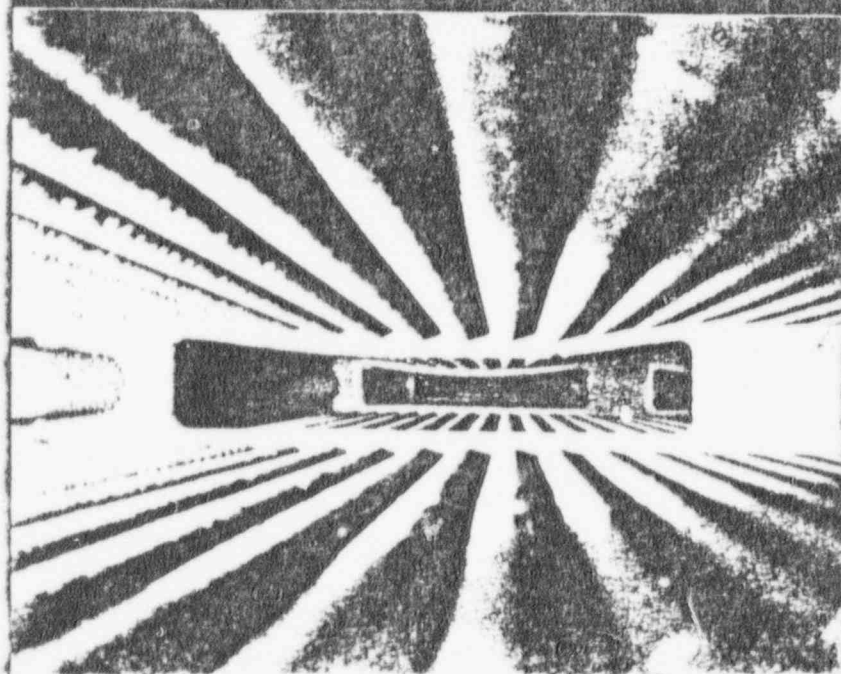
H BEFORE SLUDGE LANCE



4 INT S/G 32 9/79
 MANWAY SIDE FS 1
 BEFORE SLUDGE LANCE

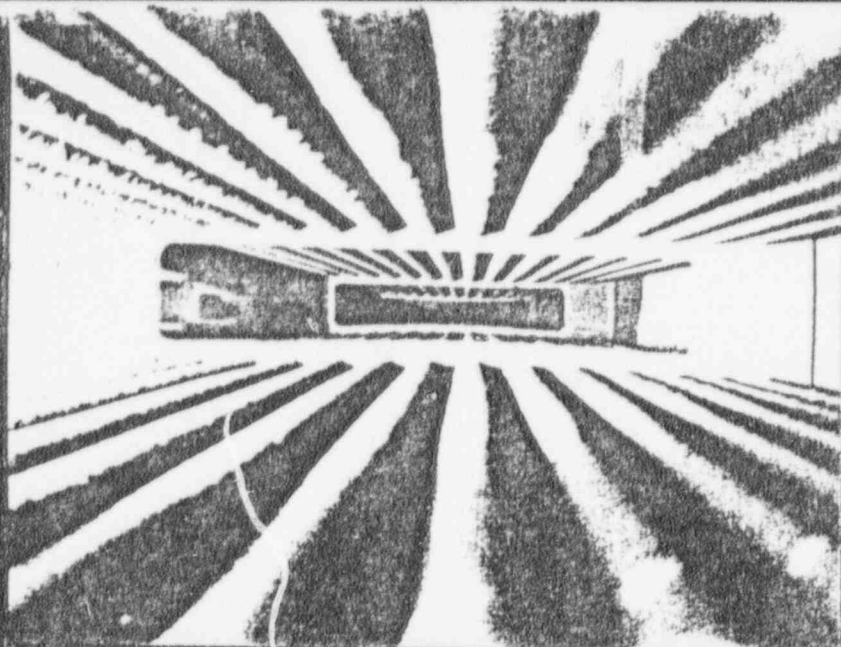


INT S/G 32 9/79 4
 MANWAY SIDE FS 2
 BEFORE SLUDGE LANCE C



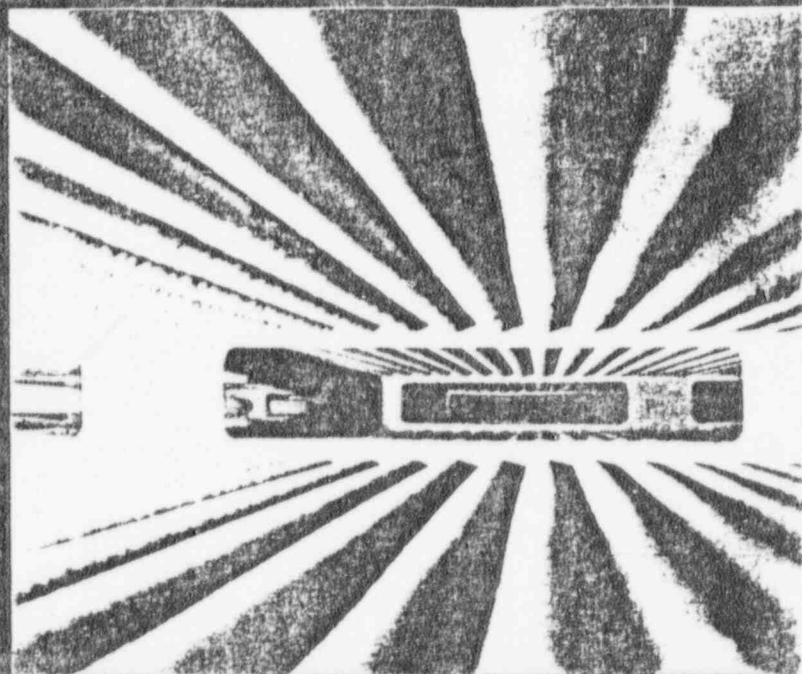
4 INT S/G 32 9/79
 MANWAY SIDE FS 3
 BEFORE SLUDGE LANCE

POOR ORIGINAL



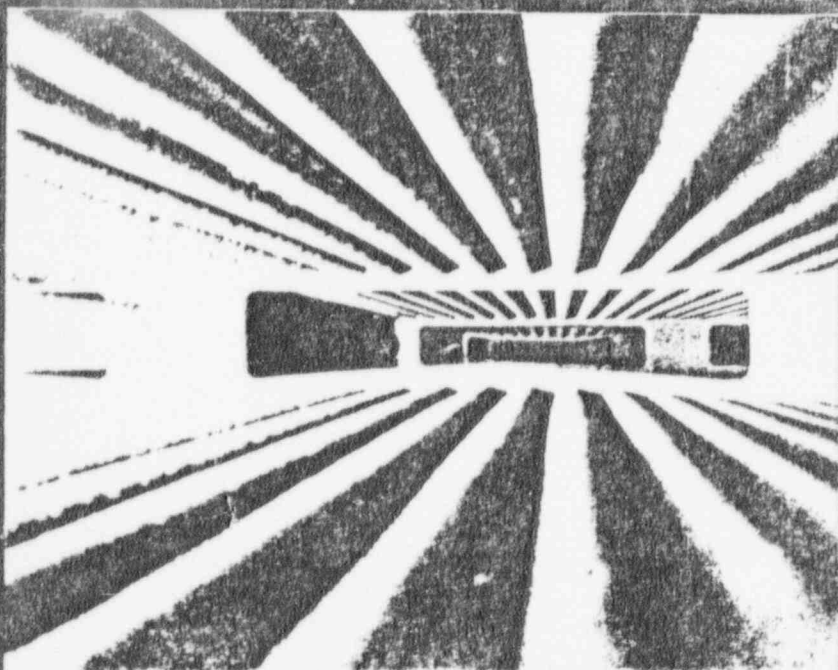
INT S/G 33 9/79

NOZZLE SIDE FS1
H BEFORE SLIDE LAKE



INT S/G 33 9/79

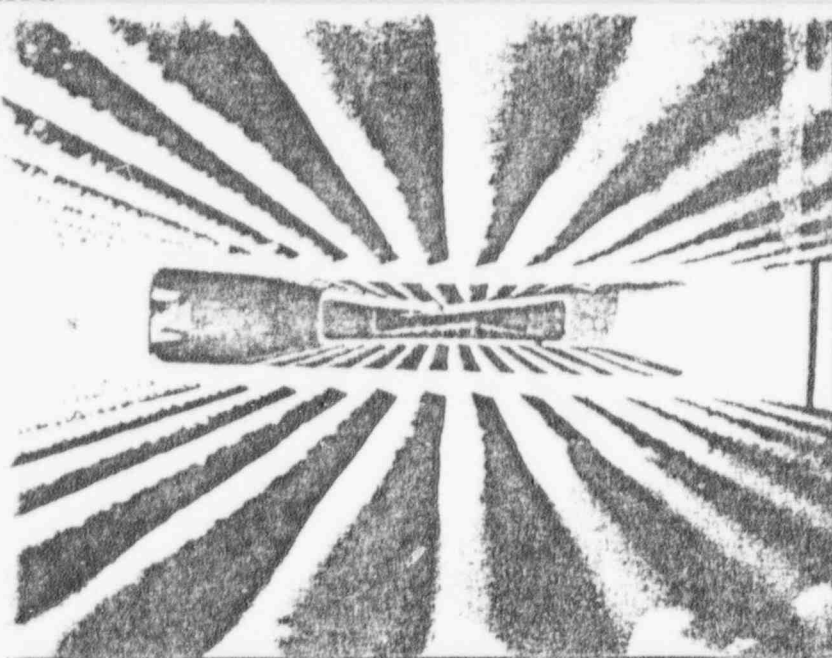
NOZZLE SIDE FS2
H BEFORE SLIDE LAKE



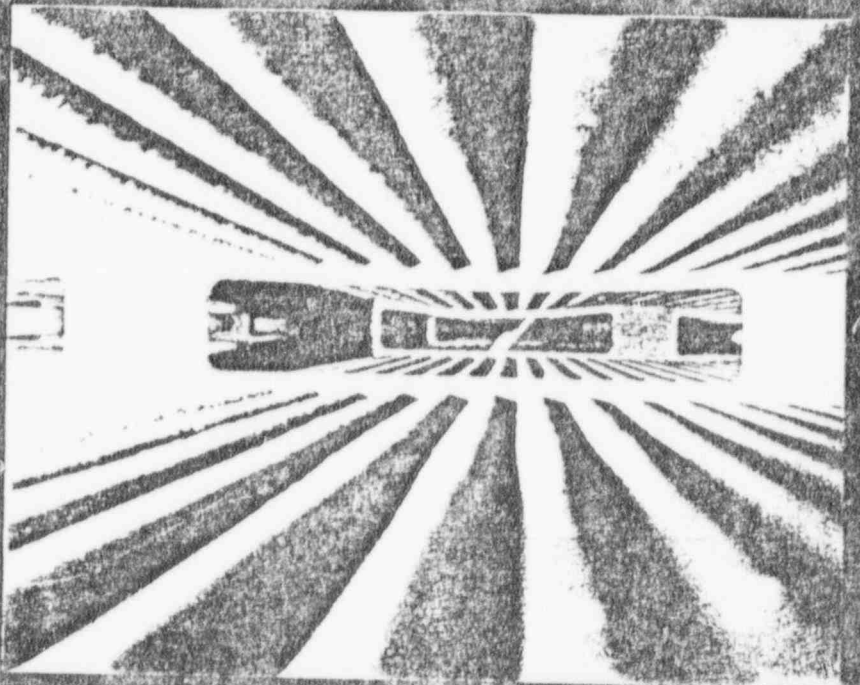
INT S/G 33 9/79

NOZZLE SIDE FS
H BEFORE SLIDE LAKE

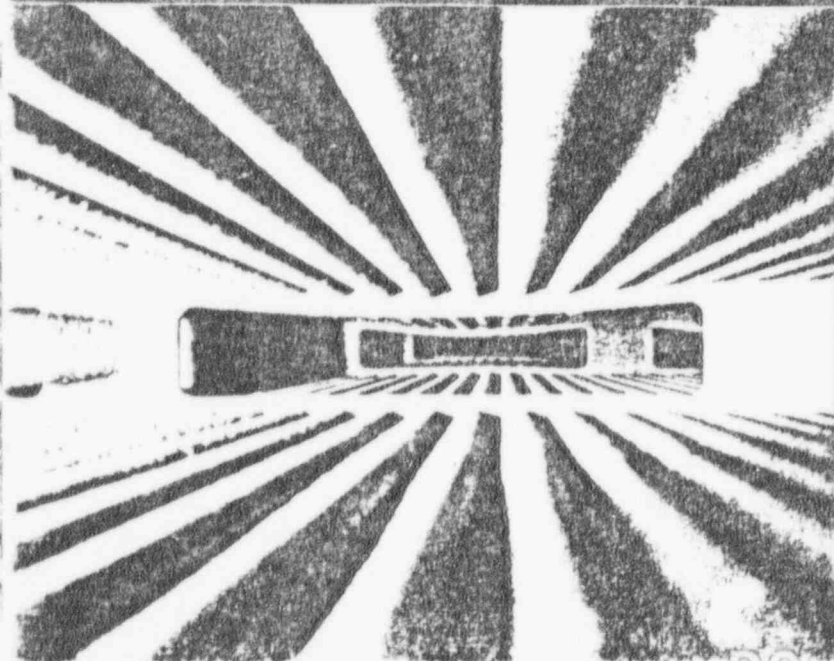
POOR ORIGINAL



"INT S/G 33 9/79
MANWAY SIDE FS1
C BEFORE SLUDGE LAKE

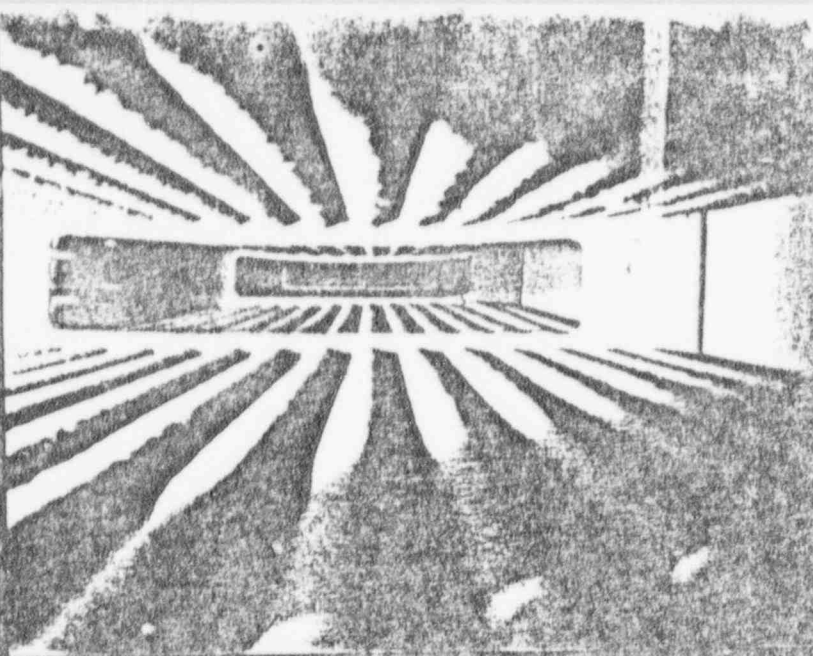


INT S/G 33 9/79^H
MANWAY SIDE FS2
BEFORE SLUDGE LAKE C

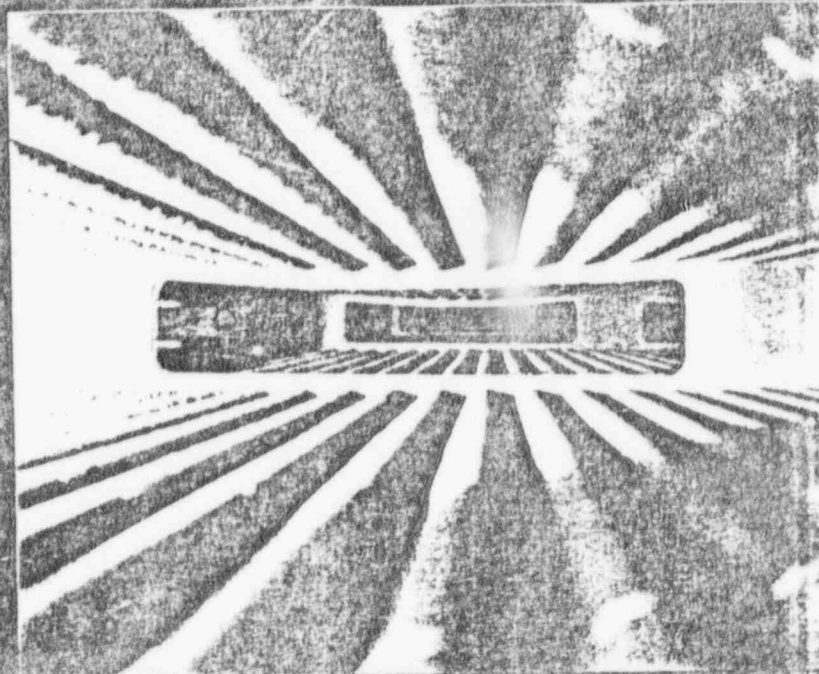


"INT S/G 33 9/79
MANWAY SIDE FS3
19

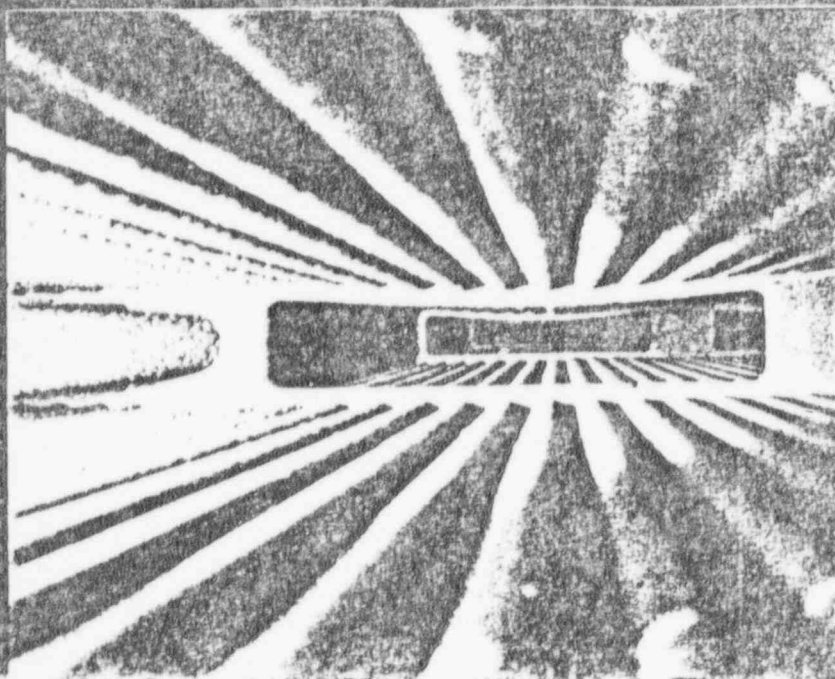
POOR ORIGINAL



INT S/G 34 9/79
NOZZLE SIDE FS1
BEFORE SLUDGE LANCE

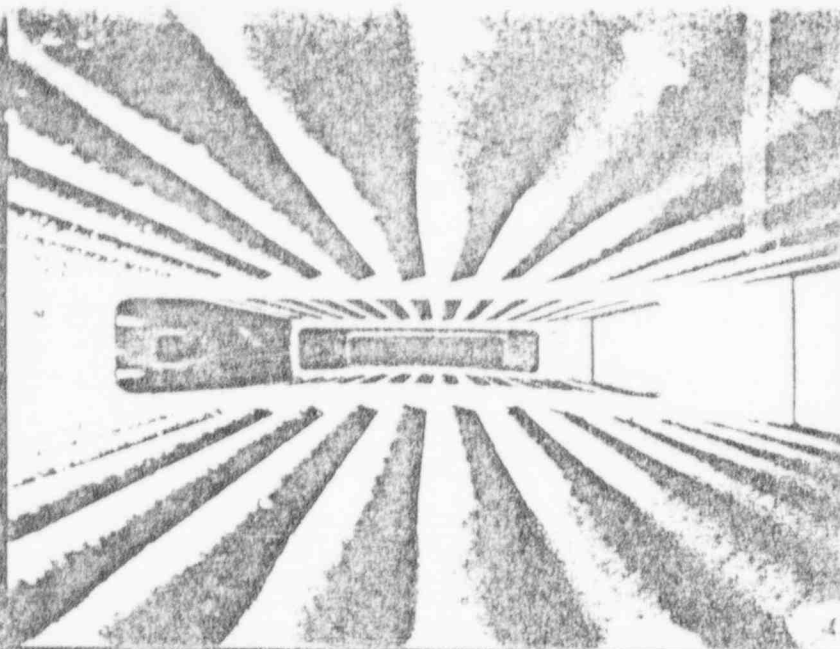


INT S/G 34 9/79 H
NOZZLE SIDE FS2
BEFORE SLUDGE LANCE

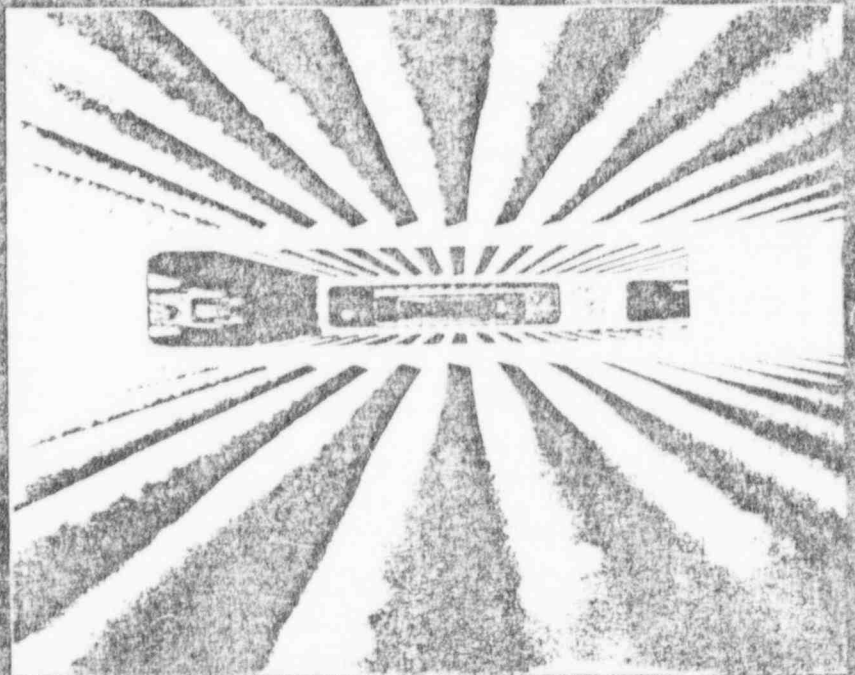


INT S/G 34 9/79
NOZZLE SIDE FS3
BEFORE SLUDGE LANCE

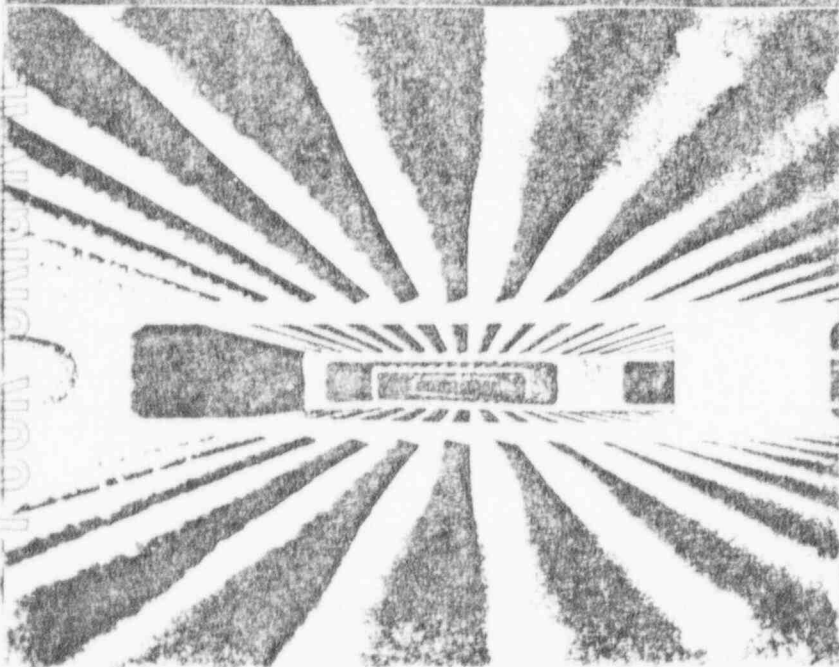
POOR ORIGINAL



INT S/G34 9/79
MANWAY SIDE FS1
BEFORE SLUDGE LAKE



INT S/G34 9/79
MANWAY SIDE FS2
BEFORE SLUDGE LAKE



INT S/G34 9/79
MANWAY SIDE FS3
BEFORE SLUDGE LAKE

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