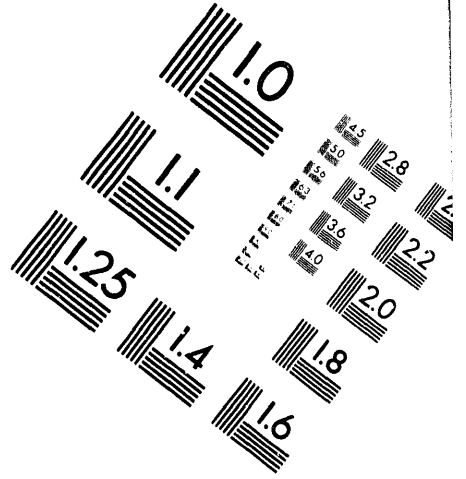
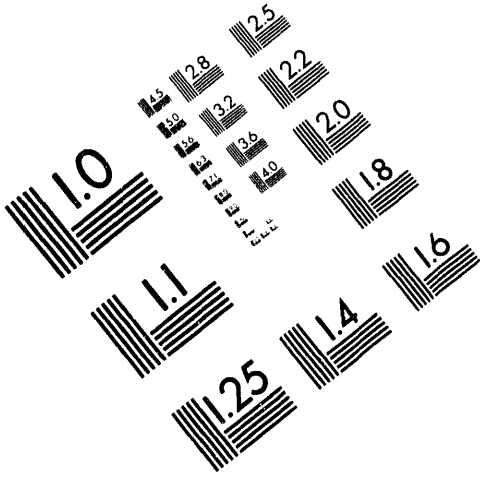




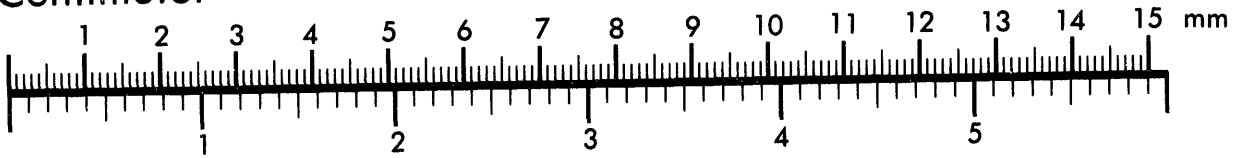
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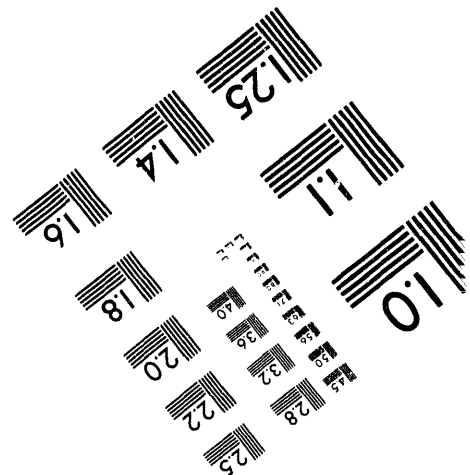
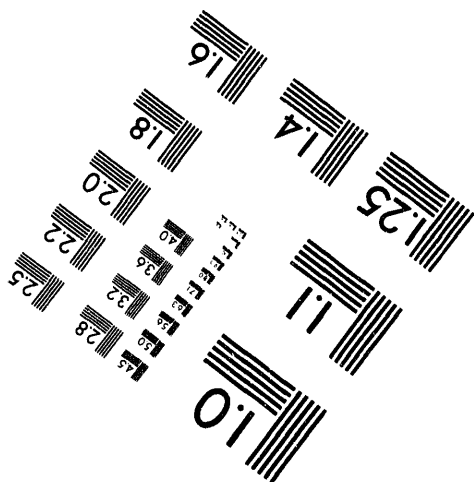
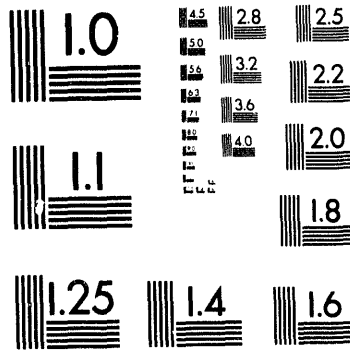
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Reactor Statistics - Section III
April, 1961 - May 15, 1962

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R. C. Burke

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June 13, 1962

REACTOR SIMULATION STUDY

The following discussion and attached summary report is sent to you to illustrate the type of information that is currently in data processing machine language and available to those who require it. During the progress meetings at which these reports were discussed, several persons indicated a desire to have a documented explanation of the report and a personal copy to scan. This is the answer to these requests.

The reports are comprised of three major sections. The first is a map indicating the number of recordings of data in the category defined by the function number code. The second is a summary of the data, in terms of hours, for each of the functions performed during an outage, except secondary function code number 21 which is the number of tubes associated with the basic function performed. The third is a summary of the secondary functions performed within a basic function class, the associated delay total, and the number of tubes involved for those functions where a delineation by tube count may be of interest.

The function code numbers relate directly to the definitions of the hours expended for charge-discharge, rupture removal, tube leak repair, tube replacement, and so forth. These definitive classes are taken from the distribution records supplied by the various reactor analysts and summarized by the Reports and Statistics group in the IPD Production Operation. The listing and record count map are an enlargement of the summary form designed in April of 1961. The codes are as follows:

	<u>Primary</u>	<u>Secondary</u>
***	1. Charge discharge - normal	1. Same as primary
Functions	2. Charge discharge - special	2. Same
	3. Charge discharge - problem	3. Same
	4. Rupture Removal	4. Same
	5. Water leak repair	5. Same
	6. Tube replacement	6. Same
	7. Tube replacement - abnormal	7. Same
	8. Mechanical Maintenance	8. Same
	9. Instrument Maintenance	9. Same
	10. Electrical Maintenance	10. Same

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	<u>Primary</u>	<u>Secondary</u>
	11. Standard Check	11. Same as Primary
	12. Production Test	12. Same
	13. Project Work	13. Same
	14. Miscellaneous - Other	14. Same
***	15. Cooling Time	15. Same
Delays	16. Startup Time	16. Same
	17. Equipment Breakdown	17. Same
	18. Delays - Man	18. Same
	19. Turco	19. Same
	20. Miscellaneous	20. Same
	21. Probologging	**21. Number of tubes involved
	22. Scrams	

One will notice immediately that the various time elements across any given function code row (primary function) do not necessarily have equal total values. The reason here is that some tasks are distributed according to the function governing or controlling the outage during different periods of the given outage. As an example, the records indicate that tube leak work was performed while normal charge-discharge was governing or the time controlling portion of a given outage. Therefore, one will find the tube leak repair hour requirements in row 1 under secondary function number 5 indicating the leak work was performed during the period when charge-discharge was the outage controlling function. The same distribution pattern will be especially noticeable with regard to associated maintenance time requirements. To determine the amount of time associated with a specific function one should look at the diagonal element for that particular function. For example, tube leak work during tube leak controlling periods will show up on the function row number 5 under secondary function column 5, and so forth.

The number of elements involved in this analysis versus the width of the paper on which to write the information required a slight modification. Therefore, it will be noted that each row is split with regard to the secondary functional relationship. The first fourteen functions are corrective in nature and the remaining are the unavoidable delays required to perform the necessary corrective work. Therefore, each row is broken at this logical point. The corrective first, followed by the associated delays ending with the corresponding tube count.

The third portion of each reactor report is a summary of the corrective time requirements, a summary of the associated delays, followed by the tube count for the period reported.

This report summarizes all the recorded data starting April 1, 1961 to May 15, 1962. This same analysis can be run for any reactor for any incremental period considering any one or combinations of causes for an outage during the above mentioned period. For example, one can get an analysis for B reactor, for the period July 1, 1961 through December 31, 1961 covering the outages for tube leaks and ruptures.

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The last page of the report is a summation of all the hours expended during the period for each of the recovery functions. This summary presents a reasonably good picture of the distribution of the total outage time to the various activities. One can, if he desires, calculate the percentage of time attributed to charge-discharge, rupture removal, mechanical maintenance and so forth. The averages, variance and standard deviation associated with tube count, in this case, are valueless.

Appendix A is an updated analysis which parallels the report HW-57166, but covers the period April 1, 1961 to May 16, 1962.

R. C. Burke

R. C. Burke

OPERATIONS RESEARCH & SYNTHESIS

REACTOR 8 OUTAGE FUNCTION EXPECTATION REPORT

APRIL 1961 TO MAY 15 1962

THIS IS AN EXEMPLARY REPORT ILLUSTRATING
 AVERAGE TIME REQUIREMENTS AND EXPECTED
 VARIANCES FOR THE BASIC TASKS REQUIRED
 TO RE-ESTABLISH ON-LINE PRODUCTION STATUS.

••ALL DATA IN HOURS-EXCEPT SECONDARY FUNCTION #21#TUBE COUNT.

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 Page 4

•• INCIDENT EXPERIENCE BY CAUSE FUNCTION ••

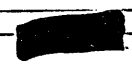
SECONDARY FUNCTION NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FUNCTION 1	21	0	0	0	0	1	0	0	0	0	0	0	0	0	20	21	12	2	1	0	21
FUNCTION 2	10	12	0	0	0	2	0	0	0	0	0	0	0	0	18	19	3	1	1	0	22
FUNCTION 3	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
FUNCTION 4	2	1	0	2	0	0	0	0	0	0	0	0	0	0	3	3	1	1	0	0	1
FUNCTION 5	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	2	1	0	0	0	0
FUNCTION 6	3	1	0	0	0	4	0	5	4	0	0	0	0	0	5	6	0	0	1	0	8
FUNCTION 7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
FUNCTION 8	0	0	0	0	0	0	0	22	7	1	0	0	2	0	18	19	3	3	1	0	1
FUNCTION 9	0	0	0	0	0	0	0	0	8	0	0	0	0	0	4	4	0	0	1	0	1
FUNCTION 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
FUNCTION 11	3	0	0	0	0	0	0	1	0	0	9	0	0	0	6	6	0	0	0	0	0
FUNCTION 12	6	2	0	0	0	0	0	3	0	0	7	7	0	0	12	13	0	0	1	0	0
FUNCTION 13	2	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0
FUNCTION 14	1	0	0	0	0	0	0	0	0	0	0	1	8	8	6	6	1	0	0	0	0
FUNCTION 15	21	7	0	1	0	4	0	4	1	0	4	3	0	2	0	0	0	0	0	0	0
FUNCTION 16	21	7	0	1	0	4	0	4	1	0	4	3	0	2	0	0	0	0	0	0	0
FUNCTION 17	7	2	0	1	0	0	0	4	1	3	0	1	0	1	0	0	0	0	0	0	0

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FUNCTION 18	4	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0
FUNCTION 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION 21	5	0	0	0	0	2	0	1	1	0	5	0	0	0	6	6	0	0	0	8
FUNCTION 22	1	0	0	0	0	0	0	1	1	0	0	7	0	0	0	0	0	0	0	0

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FUNCTION 4															
TCT.HOURS DWN	2.8	0.2	0.	21.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DWN	1.4	0.2	0.	10.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.3	0.	-0.	149.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.4	0.	-0.	12.2	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

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FUNCTION 4															
TCT.HOURS DWN	4.8	3.6	0.7	8.6	0.	0.	1.								
INCIDENTS	3	3	1	1	0	0	1								
AVERAGE DWN	1.6	1.2	0.7	8.6	0.	0.	1.								
VARIANCE	3.4	1.9	0.	0.	-0.	-0.	0.								
STD.DEVIATION	1.8	1.4	0.	0.	-0.	-0.	0.								

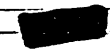
FUNCTION 5															
TCT.HOURS DWN	0.	0.	0.	0.	31.2	0.	0.	10.7	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
AVERAGE DWN	0.	0.	0.	0.	15.6	0.	0.	10.7	0.	0.	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	5.8	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	2.4	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 5															
TCT.HOURS DWN	3.0	4.4	1.8	0.	0.	0.	0.								
INCIDENTS	2	2	1	0	0	0	0								
AVERAGE DWN	1.5	2.2	1.8	0.	0.	0.	0.								
VARIANCE	0.5	0.3	0.	-0.	-0.	-0.	-0.								
STD.DEVIATION	0.7	0.6	0.	-0.	-0.	-0.	-0.								

FUNCTION 6															
TCT.HOURS DWN	4.6	0.1	0.	0.	0.	23.0	0.	27.9	9.2	0.	0.	0.	0.	0.	0.
INCIDENTS	3	1	0	0	0	6	0	5	4	0	0	0	0	0	0
AVERAGE DWN	1.5	0.1	0.	0.	0.	3.8	0.	5.6	2.3	0.	0.	0.	0.	0.	0.
VARIANCE	2.0	0.	-0.	-0.	-0.	12.4	-0.	4.8	3.7	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	1.4	0.	-0.	-0.	-0.	3.5	-0.	2.2	1.9	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 6															
TCT.HOURS DWN	3.3	3.5	0.	0.	1.4	0.	73.								
INCIDENTS	5	6	0	0	1	0	8								
AVERAGE DWN	0.7	0.6	0.	0.	1.4	0.	9.								
VARIANCE	0.1	0.2	-0.	-0.	0.	-0.	492.								
STD.DEVIATION	0.4	0.5	-0.	-0.	0.	-0.	22.								

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FUNCTION 7														
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.	0.	1.8	0.	0.	0.	0.	0.
INCIDENTS	0	0	0	0	0	0	0	0	1	0	0	0	0	0
AVERAGE DCNR	0.	0.	0.	0.	0.	0.	0.	0.	1.8	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.

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FUNCTION 7							
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	1.
INCIDENTS	0	0	0	0	0	0	1
AVERAGE DCNR	0.	0.	0.	0.	0.	0.	1.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	0.

FUNCTION 8														
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.	182.8	10.3	3.0	0.	0.	4.5	0.
INCIDENTS	0	0	0	0	0	0	0	22	7	1	0	0	2	0
AVERAGE DCNR	0.	0.	0.	0.	0.	0.	0.	8.3	1.5	3.0	0.	0.	2.2	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	38.3	0.5	0.	-0.	-0.	1.1	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.2	0.7	0.	-0.	-0.	1.1	-0.

FUNCTION 8							
TCT.HOURS DWN	20.2	16.3	5.4	5.4	1.6	0.	10.
INCIDENTS	12	19	3	3	1	0	1
AVERAGE DCNR	1.7	0.9	1.8	1.8	1.6	0.	10.
VARIANCE	0.9	0.5	3.3	0.4	0.	-0.	0.
STD.DEVIATION	0.9	0.7	1.8	0.7	0.	-0.	0.

FUNCTION 9														
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.	0.	20.5	0.	0.	0.	0.	0.
INCIDENTS	0	0	0	0	0	0	0	0	8	0	0	0	0	0
AVERAGE DCNR	0.	0.	0.	0.	0.	0.	0.	0.	2.6	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.5	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.6	-0.	-0.	-0.	-0.	-0.

FUNCTION 9							
TCT.HOURS DWN	1.2	1.3	0.	0.	0.3	0.	5.
INCIDENTS	4	4	0	0	1	0	1
AVERAGE DCNR	0.4	0.3	0.	0.	0.3	0.	5.
VARIANCE	0.2	0.1	-0.	-0.	0.	-0.	0.
STD.DEVIATION	0.5	0.3	-0.	-0.	0.	-0.	0.

FUNCTION 10														
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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AVERAGE DOWN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 10														
TCT.HOURS DOWN	0.	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0	0	1	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DOWN	0.	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 11														
TCT.HOURS DOWN	2.4	0.	0.	0.	0.	0.	0.	8.4	0.	0.	25.1	0.	0.	0.
INCIDENTS	3	0	0	0	0	0	0	1	0	0	9	0	0	0
AVERAGE DOWN	0.8	0.	0.	0.	0.	0.	0.	8.4	0.	0.	2.8	0.	0.	0.
VARIANCE	0.1	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	5.2	-0.	-0.	-0.
STD.DEVIATION	0.3	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	2.3	-0.	-0.	-0.
FUNCTION 11														
TCT.HOURS DOWN	3.3	3.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	4	4	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DOWN	0.8	0.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.0	0.1	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.2	0.3	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 12														
TCT.HOURS DOWN	24.5	10.4	0.	0.	0.	0.	0.	5.1	0.	0.	12.8	36.5	0.	0.
INCIDENTS	4	2	0	0	0	0	0	3	0	0	7	7	0	0
AVERAGE DOWN	6.1	5.2	0.	0.	0.	0.	0.	1.7	0.	0.	1.8	5.2	0.	0.
VARIANCE	22.1	44.2	-0.	-0.	-0.	-0.	-0.	1.3	-0.	-0.	-1.6	37.1	-0.	-0.
STD.DEVIATION	4.7	6.6	-0.	-0.	-0.	-0.	-0.	1.1	-0.	-0.	1.3	6.1	-0.	-0.
FUNCTION 12														
TCT.HOURS DOWN	7.6	6.0	0.	0.	0.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	12	13	0	0	1	0	0	0	0	0	0	0	0	0
AVERAGE DOWN	0.6	0.5	0.	0.	0.3	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.7	0.2	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.8	0.5	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 13														
TCT.HOURS DOWN	4.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.1	0.	0.
INCIDENTS	2	0	0	0	0	0	0	0	0	0	0	2	0	0
AVERAGE DOWN	2.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.5	0.	0.
VARIANCE	2.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	4.2	-0.	-0.
STD.DEVIATION	1.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.1	-0.	-0.

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FUNCTION 13							
TCT.HOURS DWN	0.4	0.3	0.	0.	0.	0.	0.
INCIDENTS	2	2	0	0	0	0	0
AVERAGE DWN	0.3	0.1	0.	0.	0.	0.	0.
VARIANCE	0.0	0.0	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.0	0.1	-0.	-0.	-0.	-0.	-0.

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FUNCTION 14														
TCT.HOURS DWN	3.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	15.0	22.3	47.1
INCIDENTS	1	0	0	0	0	0	0	0	0	0	0	1	8	8
AVERAGE DWN	3.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	15.0	2.8	5.9
VARIANCE	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	6.2	84.2
STD.DEVIATION	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	2.5	9.2

FUNCTION 14							
TCT.HOURS DWN	11.2	10.3	0.1	0.	0.	0.	0.
INCIDENTS	4	4	1	0	0	0	0
AVERAGE DWN	1.9	1.7	0.1	0.	0.	0.	0.
VARIANCE	2.2	3.0	0.	-0.	-0.	-0.	-0.
STD.DEVIATION	1.5	1.7	0.	-0.	-0.	-0.	-0.

FUNCTION 15														
TCT.HOURS DWN	62.4	3.9	0.	3.7	0.	3.9	0.	3.0	1.2	0.	2.2	1.7	0.	7.0
INCIDENTS	21	7	0	1	0	4	0	4	1	0	4	3	0	2
AVERAGE DWN	3.0	0.6	0.	3.7	0.	1.0	0.	0.7	1.2	0.	0.5	0.6	0.	3.5
VARIANCE	2.1	0.0	-0.	0.	-0.	0.3	-0.	0.1	0.	-0.	0.1	0.1	-0.	0.5
STD.DEVIATION	1.5	0.2	-0.	0.	-0.	0.5	-0.	0.2	0.	-0.	0.2	0.4	-0.	0.7

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FUNCTION 15							
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0	0	0	0	0	0	0
AVERAGE DWN	0.	0.	0.	0.	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 16														
TCT.HOURS DWN	54.9	4.3	0.	2.8	0.	3.8	0.	2.8	0.8	0.	2.2	1.4	0.	7.2
INCIDENTS	21	7	0	1	0	4	0	4	1	0	4	3	0	2
AVERAGE DWN	2.6	0.6	0.	2.8	0.	0.9	0.	0.7	0.8	0.	0.5	0.5	0.	3.6
VARIANCE	2.1	0.2	-0.	0.	-0.	0.2	-0.	0.2	0.	-0.	0.2	0.1	-0.	1.6
STD.DEVIATION	1.4	0.4	-0.	0.	-0.	0.5	-0.	0.5	0.	-0.	0.4	0.3	-0.	1.3

FUNCTION 16							
TCT.HOURS DWN	0.	0.	0.	0.	0.	0.	0.

STD.DEVIATION -0. -0. -0. -0. -0. -0. -0.

FUNCTION 20
 TCT.HOURS OWN 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 INCIDENTS 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 AVERAGE DOWN 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 VARIANCE -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0.
 STD.DEVIATION -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0. -0.

FUNCTION 20
 TCT.HOURS OWN 0. 0. 0. 0. 0. 0. 0.
 INCIDENTS 0 0 0 0 0 0 0
 AVERAGE DOWN 0. 0. 0. 0. 0. 0.
 VARIANCE -0. -0. -0. -0. -0. -0.
 STD.DEVIATION -0. -0. -0. -0. -0. -0.

FUNCTION 21
 TCT.HOURS OWN 12.3 0. 0. 0. 0. 5.7 0. 8.9 0.9 0. 11.6 0. 0. 0.
 INCIDENTS 4 0 0 0 0 2 0 1 1 0 5 0 0 0
 AVERAGE DOWN 2.5 0. 0. 0. 0. 2.8 0. 8.9 0.9 0. 2.3 0. 0. 0.
 VARIANCE 3.7 -0. -0. -0. -0. 9.2 -0. 0. 0. -0. 0.9 -0. -0. -0.
 STD.DEVIATION 1.9 -0. -0. -0. -0. 3.0 -0. 0. 0. -0. 1.0 -0. -0. -0.

FUNCTION 21
 TCT.HOURS OWN 3.9 4.0 0. 0. 0. 0. 385.
 INCIDENTS 4 4 0 0 0 0 8
 AVERAGE DOWN 0.4 0.7 0. 0. 0. 48.
 VARIANCE 0.4 0.3 -0. -0. -0. -0. 1083.
 STD.DEVIATION 0.4 0.5 -0. -0. -0. -0. 33.

FUNCTION 22
 TCT.HOURS OWN 1.1 0. 0. 0. 0. 0. 0. 1.5 3.0 0. 0. 21.2 0. 0.
 INCIDENTS 1 0 0 0 0 0 0 1 1 0 0 7 0 0
 AVERAGE DOWN 1.1 0. 0. 0. 0. 0. 1.5 3.0 0. 0. 3.0 0. 0.
 VARIANCE 0. -0. -0. -0. -0. -0. 0. 0. -0. -0. 4.7 -0. -0.
 STD.DEVIATION 0. -0. -0. -0. -0. -0. 0. 0. -0. -0. 2.6 -0. -0.

FUNCTION 22
 TCT.HOURS OWN 0. 0. 0. 0. 0. 0. 0.
 INCIDENTS 0 0 0 0 0 0 0
 AVERAGE DOWN 0. 0. 0. 0. 0. 0.
 VARIANCE -0. -0. -0. -0. -0. -0. -0.
 STD.DEVIATION -0. -0. -0. -0. -0. -0. -0.

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***SUB TOTAL DELINEATION**

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FUNCTION 1		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECONCARIES	367.4	SUM OF DELAYS	82.4	SUM	11847.
NUMBER OF INCIDENTS	21	INCIDENTS	21	CNT	21
AVERAGE HOURS REQ.	17.5	AVERAGE	3.9	AVG	564.
VARIANCE	444.5	VARIANCE	7.7		
STD. DEVIATION	21.1	STD.DEVIATION	2.8		

FUNCTION 2		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECONCARIES	139.1	SUM OF DELAYS	28.9	SUM	2760.
NUMBER OF INCIDENTS	22	INCIDENTS	22	CNT	22
AVERAGE HOURS REQ.	6.3	AVERAGE	1.3	AVG	125.
VARIANCE	57.7	VARIANCE	2.0		
STD. DEVIATION	7.6	STD.DEVIATION	1.4		

FUNCTION 3		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECONCARIES	4.8	SUM OF DELAYS	0.	SUM	7.
NUMBER OF INCIDENTS	3	INCIDENTS	3	CNT	3
AVERAGE HOURS REQ.	1.6	AVERAGE	0.	AVG	2.
VARIANCE	4.3	VARIANCE	0.		
STD. DEVIATION	2.1	STD.DEVIATION	0.		

FUNCTION 4		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECONCARIES	24.9	SUM OF DELAYS	17.7	SUM	1.
NUMBER OF INCIDENTS	4	INCIDENTS	4	CNT	4
AVERAGE HOURS REQ.	6.2	AVERAGE	4.4	AVG	0.
VARIANCE	131.5	VARIANCE	24.0		
STD. DEVIATION	11.5	STD.DEVIATION	4.9		

FUNCTION 5		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECONCARIES	47.9	SUM OF DELAYS	9.2	SUM	0.
NUMBER OF INCIDENTS	2	INCIDENTS	2	CNT	2
AVERAGE HOURS REQ.	20.9	AVERAGE	4.6	AVG	0.
VARIANCE	977.2	VARIANCE	1.3		
STD. DEVIATION	31.3	STD.DEVIATION	1.1		

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FUNCTION 4		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECNCARIES	64.8	SUM OF DELAYS	8.2	SUM	73.
NUMBER OF INCIDENTS	9	INCIDENTS	9	CNT	9
AVERAGE HOURS REQD.	7.2	AVERAGE	0.9	AVG	8.
VARIANCE	107.5	VARIANCE	1.2		
STD. DEVIATION	10.4	STD.DEVIATION	1.1		

FUNCTION 7		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECNCARIES	1.8	SUM OF DELAYS	0.	SUM	1.
NUMBER OF INCIDENTS	1	INCIDENTS	1	CNT	1
AVERAGE HOURS REQD.	1.8	AVERAGE	0.	AVG	1.
VARIANCE	0.	VARIANCE	0.		
STD. DEVIATION	0.	STD.DEVIATION	0.		

FUNCTION 21		ASSOCIATED DELAY TOTALS		TOTAL TUBES	
SUM#BASICS&SECNCARIES	39.4	SUM OF DELAYS	7.9	SUM	385.
NUMBER OF INCIDENTS	7	INCIDENTS	7	CNT	7
AVERAGE HOURS REQD.	5.6	AVERAGE	1.1	AVG	55.
VARIANCE	44.4	VARIANCE	1.4		
STD. DEVIATION	4.8	STD.DEVIATION	1.2		

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SECONDARY
FUNCTION NUMBER

1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21

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FUNCTION TOTAL

TOT. HOURS DWN	466.1	79.7	2.3	21.9	31.2	29.4	0.	245.6	40.9	3.0	50.2	64.6	26.8	47.1
INCIDENTS	24	12	1	2	2	8	0	26	17	1	16	10	10	8
AVERAGE DOWN	19.4	6.6	2.3	10.9	15.6	3.7	0.	9.4	2.4	3.0	3.1	6.5	2.7	5.9
VARIANCE	250.9	20.1	0.	149.6	5.8	10.0	-0.	44.4	5.0	0.	7.1	34.5	5.0	84.2
STD. DEVIATION	15.8	4.5	0.	12.2	2.4	3.2	-0.	6.7	2.2	0.	2.7	5.9	2.2	9.2

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FUNCTION TOTAL

TOT. HOURS DWN	101.0	90.4	23.3	19.4	7.2	0.	14566.
INCIDENTS	26	27	16	5	1	0	24
AVERAGE DOWN	3.9	3.3	1.5	3.9	7.2	0.	607.
VARIANCE	0.7	1.6	1.7	10.0	0.	-0.	204645.
STD. DEVIATION	0.8	1.3	1.3	3.2	0.	-0.	452.

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SECONDARY
FUNCTION NUMBER

1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21

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FUNCTION TOTAL	15	16	17	18	19	20	21	245.6	40.9	3.0	50.2	64.6	26.6	47.1
TOT. HOURS DWN	466.1	79.7	2.3	21.9	31.2	29.4	0.	26	17	1.	16	10	10	8
INCIDENTS	24	12	1	2	2	8	0	9.4	2.4	3.0	3.1	6.5	2.7	5.9
AVERAGE DOWN	19.4	6.6	2.3	10.9	15.6	3.7	0.	44.4	5.0	0.	7.1	34.5	5.0	84.2
VARIANCE	250.9	20.1	0.	149.6	5.8	10.0	-0.	6.7	2.2	0.	2.7	5.9	2.2	9.2
STD. DEVIATION	15.8	4.5	0.	12.2	2.4	3.2	-0.							

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FUNCTION TOTAL	101.0	90.4	23.3	19.4	7.2	0.	14566.
TOT. HOURS DWN	26	27	16	5	1	0	24
INCIDENTS	3.9	3.3	1.5	3.9	7.2	0.	607.
AVERAGE DOWN	0.7	1.6	1.7	10.0	0.	-0.	204645.
VARIANCE	0.8	1.3	1.3	3.2	0.	-0.	452.
STD. DEVIATION							

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	TOTAL HOURS DOWN							
	REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
CAUSE 1	0.	448.5	308.3	173.2	43.1	0.	431.8	643.1
CAUSE 2	516.4	978.0	584.2	742.7	373.3	642.8	334.0	243.3
CAUSE 3	805.1	192.1	538.8	794.8	699.4	1148.4	0.	0.
CAUSE 4	1681.8	526.7	1172.7	831.3	829.6	917.8	0.	33.4
CAUSE 5	4.1	10.2	50.6	173.8	133.3	127.7	663.6	334.1
CAUSE 6	31.1	72.4	146.4	35.3	1.8	4.7	0.	38.0
CAUSE 7	0.	56.0	5.4	0.	134.6	116.5	2.1	0.
CAUSE 8	0.	3.6	0.	0.	6.3	0.	0.	0.
CAUSE 9	72.6	0.5	121.5	274.1	41.8	0.	0.6	92.7
CAUSE 10	0.	0.	0.	0.	0.	0.	0.	1.1
CAUSE 11	0.1	0.	0.	0.	0.	0.	117.5	0.
CAUSE 12	0.	200.6	0.	0.	0.	0.	0.	0.
CAUSE 13	102.8	43.4	0.	0.	188.9	0.	0.	0.
CAUSE 14	52.9	0.	0.5	89.2	27.1	0.5	0.	0.
CAUSE 15	37.7	0.	0.	0.	0.	0.	0.	0.
CAUSE 16	7.5	11.1	0.	3.1	0.	2.5	0.	0.

- Case 1 = Scheduled Charge-Discharge
- 2 = Rupture
- 3 = Tube Replacement
- 4 = Water Leaks
- 5 = Control Trips (Panellit, Beckman, etc.)
- 6 = Front Face Leaks
- 7 = Rear Face Leaks
- 8 = Production Test
- 9 = Electrical Power Failure
- 10 = Oriface Failure
- 11 = Control Rod Failure
- 12 = Scheduled Overhaul
- 13 = Water Supply Failure
- 14 = Ball Drop - Loss of Reactivity
- 15 = Plugged Rear Nozzles
- 16 = Faulty Thermocouples

APPENDIX

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	TOTAL DOWN INCIDENTS							
	REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
CAUSE 1	0	4	3	2	1	0	6	9
CAUSE 2	9	14	13	18	9	21	8	6
CAUSE 3	2	1	2	2	4	6	0	0
CAUSE 4	29	11	22	14	15	25	0	1
CAUSE 5	4	16	10	12	5	24	21	19
CAUSE 6	1	2	4	1	1	3	0	1
CAUSE 7	0	3	2	0	4	4	2	0
CAUSE 8	0	1	0	0	1	0	0	0
CAUSE 9	2	1	5	2	1	0	1	1
CAUSE10	0	0	0	0	0	0	0	1
CAUSE11	1	0	0	0	0	0	2	0
CAUSE12	0	2	0	0	0	0	0	0
CAUSE13	2	1	0	0	3	0	0	0
CAUSE14	2	0	1	2	2	2	0	0
CAUSE15	2	0	0	0	0	0	0	0
CAUSE16	2	2	0	2	0	2	0	0

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	REACTOR1		REACTOR2		**DOWN INCIDENT AVERAGE AND STANDARD DEVIATION*		REACTOR3		REACTOR4		REACTOR5		REACTOR6		REACTOR7		REACTOR8	
CAUSE 1	0.	0.	112.1	38.3	102.8	18.4	86.6	68.5	43.1	0.	0.	0.	72.0	9.7	71.5	9.6		
CAUSE 2	57.4	28.4	69.9	73.0	44.9	21.2	41.3	5.1	41.5	21.7	30.6	13.8	41.8	35.6	40.6	27.4		
CAUSE 3	402.5	27.6	192.1	0.	269.4	168.8	397.4	75.6	174.8	142.4	191.4	148.6	0.	0.	0.	0.		
CAUSE 4	58.0	36.5	47.9	30.3	53.3	16.2	59.4	24.9	55.3	17.0	36.7	25.4	0.	0.	33.4	0.		
CAUSE 5	1.0	1.2	0.6	0.5	5.1	12.6	14.5	20.9	26.7	26.5	5.3	10.5	31.6	25.9	17.6	16.6		
CAUSE 6	31.1	0.	36.2	0.5	36.6	29.3	35.3	0.	1.8	0.	1.6	0.6	0.	0.	38.0	0.		
CAUSE 7	0.	0.	18.7	30.7	2.7	3.1	0.	0.	33.6	37.3	29.1	57.7	1.1	0.1	0.	0.		
CAUSE 8	0.	0.	3.6	0.	0.	0.	0.	0.	6.3	0.	0.	0.	0.	0.	0.	0.		
CAUSE 9	36.3	8.5	0.5	0.	24.3	22.4	137.0	142.5	41.8	0.	0.	0.	0.6	0.	92.7	0.		
CAUSE10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1	0.		
CAUSE11	0.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	58.7	3.2	0.	0.		
CAUSE12	0.	0.	100.3	84.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
CAUSE13	51.4	70.4	43.4	0.	0.	0.	0.	0.	63.0	25.4	0.	0.	0.	0.	0.	0.		
CAUSE14	26.5	36.1	0.	0.	0.5	0.	44.6	23.9	13.5	5.5	0.2	0.0	0.	0.	0.	0.		
CAUSE15	18.8	25.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
CAUSE16	3.8	3.1	5.6	7.6	0.	0.	1.5	1.6	0.	0.	1.3	0.6	0.	0.	0.	0.		

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****DOWN INCIDENT SUMMARY- TOTAL HOURS, PERCENTAGE OF TOTAL DEPARTMENT HOURS AND TIME OPERATING EFFICIENCY****

	REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
TOTAL	3312.2	2543.2	2928.4	3117.4	2479.1	2961.0	1549.8	1385.7
PERCENT	16.335	12.542	14.442	15.374	12.226	14.603	7.643	6.834
EFFNCY	0.664	0.742	0.703	0.684	0.749	0.700	0.843	0.860

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	TOTAL HOURS	**DEPARTMENT SUMMARY** TIMES DOWN	AVERAGE	STANDARD DEVIATION
CAUSE 1	2048.0	25.0	81.9	28.2
CAUSE 2	4414.8	98.0	45.0	34.7
CAUSE 3	4178.7	17.0	245.8	146.4
CAUSE 4	5993.4	117.0	51.2	27.5
CAUSE 5	1497.4	111.0	13.5	19.9
CAUSE 6	329.8	13.0	25.4	22.1
CAUSE 7	314.6	15.0	21.0	36.3
CAUSE 8	9.8	2.0	4.9	1.9
CAUSE 9	603.7	13.0	46.4	63.1
CAUSE10	1.1	1.0	1.1	0.
CAUSE11	117.6	3.0	39.2	33.9
CAUSE12	200.6	2.0	100.3	84.1
CAUSE13	335.1	6.0	55.8	36.3
CAUSE14	170.2	9.0	18.9	23.5
CAUSE15	37.7	2.0	18.8	25.9
CAUSE16	24.3	8.0	3.0	3.7

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****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE 1

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
	1040.3	749.9	486.6			977.6	857.7
	1147.4	6621.5				1069.4	747.8
	2299.6					760.5	1055.8
						826.8	1591.4
						1552.7	473.2
							412.3
							642.9
							917.2

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INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE 2

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
334.6	170.0	444.1	502.2	189.2	418.9	1.8	2864.7
138.2	834.2	2898.2	1965.7	136.1	2.4	186.8	594.2
3.3	34.7	36.2	395.5	1528.8	1274.2	538.6	2881.2
1067.0	2970.2	253.5	142.1	207.0	1165.6	395.0	16.1
4788.8	251.7	545.9	203.7	62.9	519.5	5722.4	1138.6
125.8	1007.9	1085.8	41.3	2.0	26.6	1439.6	
193.3	360.6	978.1	93.7	900.2	74.9	96.4	
1491.5	224.7	494.8	74.2	12.7	660.8		
	375.9	395.8	28.1		1625.4		
	1415.7	1309.1	38.0		198.3		
	212.1	6.6	1120.8		129.8		
	402.9	105.0	270.4		45.6		
	27.9		1720.8		127.2		
			916.8		12.2		
			105.4		183.4		
			88.2		79.0		
			116.9		64.1		
					1083.4		
					337.1		
					901.9		

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DECLASSIFIED

BM-57168 H

****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE 3

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
1794.7		1515.0	1445.1	1934.1	1050.3		
				3004.4	2841.2		
				1419.6	1117.1		
					1675.2		
					1112.3		

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INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE 4

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
81.4	2.7	1402.1	61.3	6.6	2.9		
1472.5	666.8	506.1	425.8	2107.1	538.4		
430.9	69.0	335.7	103.0	16.2	453.2		
49.7	99.5	326.7	522.0	105.8	192.0		
111.1	184.4	174.3	162.5	577.0	580.9		
229.2	3507.2	776.9	529.8	399.6	203.4		
255.5	1255.8	31.2	69.1	278.4	584.7		
89.1	76.1	81.8	3096.1	1461.8	356.5		
12.0	1360.7	519.0	281.9	6.7	314.1		
99.5	300.8	195.8	1082.6	105.0	182.5		
109.2		132.5	458.2	352.5	92.5		
124.4		139.8	506.7	326.2	73.4		
156.2		43.1	1035.5	139.8	92.3		
2.3		385.6		959.0	448.3		
148.4		266.2			160.7		
49.4		119.0			70.7		
121.0		76.2			140.6		
75.6		145.6			113.6		
62.5		197.4			304.5		
347.6		270.0			136.8		
137.6		1989.8			457.5		
903.5					69.2		
36.2					781.4		
152.3					365.5		
365.8							
150.1							
249.0							
161.1							

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INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE 5

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
631.1	1203.3	1393.1	2782.2	73.3	305.1	353.6	15.6
1645.3	3.3	2963.8	293.5	4878.6	308.2	323.1	574.4
2217.9	2368.3	529.6	622.6	210.8	205.6	628.3	322.8
	968.9	786.1	286.9	1453.6	357.5	1252.5	712.5
	36.1	358.8	326.6		1094.9	148.0	41.6
	136.6	1045.7	117.7		1.1	585.2	2462.0
	1183.7	0.1	69.6		1044.4	308.2	1008.4
	63.1	492.5	925.7		0.3	130.9	714.7
	1050.3	66.3	1139.2		1.4	558.4	51.5
	987.1		1881.9		0.6	226.4	330.9
	411.6		332.0		1407.1	792.9	0.2
	840.6				11.7	208.3	1.1
	1.3				3.3	357.8	0.7
	0.5				15.5	646.0	70.2
	0.4				5.3	483.7	457.1
					65.6	4.1	179.2
					110.9	1586.2	447.9
					0.9	1.4	928.0
					1063.7	19.1	
					742.6	317.3	
					702.6		
					0.6		
					975.2		

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••INTERVAL BETWEEN LIKE OUTAGES BY CAUSE••
CAUSE 6

REACTOR1

REACTOR2
6044.2

REACTOR3
1214.6
3074.2
1649.0

REACTOR4

REACTOR5

REACTOR6
657.6
660.1

REACTOR7

REACTOR8

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****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE 7

REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8
	4389.9	3551.9		529.7	704.3	1079.1	
	4147.9			753.4	1000.8		
				6536.2	2965.5		

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EM-57168 H

****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE 8

REACTOR1

REACTOR2

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

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1973

****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE 9

REACTOR1
5588.9

REACTOR2

REACTOR3
1373.5
17.8
3146.1
1833.2

REACTOR4
6220.0

REACTOR5

REACTOR6

REACTOR7

REACTOR8

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****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE10

REACTOR1

REACTOR2

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

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****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE11

REACTOR1

REACTOR2

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7
540.7

REACTOR8

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****INTERVAL BETWEEN LIKE OUTAGES BY CAUSE****
CAUSE12

REACTOR1

REACTOR2
3112.7

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

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REACTOR1 272.6
 REACTOR2
 REACTOR3
 REACTOR4
 REACTOR5 517.8
 REACTOR6 28.6
 REACTOR7
 REACTOR8

INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
 CAUSE13

••INTERVAL BETWEEN LIKE OUTAGES BY CAUSE••
CAUSE14

REACTOR1
312.5

REACTOR2

REACTOR3

REACTOR4
115.3

REACTOR5
10.1

REACTOR6
1.1

REACTOR7

REACTOR8

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•• INTERVAL BETWEEN LIKE OUTAGES BY CAUSE ••
CAUSE 15

REACTOR1
5512.3

REACTOR2

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

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••INTERVAL BETWEEN LIKE OUTAGES BY CAUSE••
CAUSE16

REACTOR1
3936.5

REACTOR2
3340.8

REACTOR3

REACTOR4
8137.4

REACTOR5

REACTOR6
0.7

REACTOR7

REACTOR8

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	SUMMARY OF INTERVALS--AVERAGES AND STANDARD DEVIATIONS															
	REACTOR1	REACTOR2	REACTOR3	REACTOR4	REACTOR5	REACTOR6	REACTOR7	REACTOR8								
CAUSE 1	0.	0.	1495.8	698.2	3685.7	4151.8	486.6	0.	0.	0.	0.	0.	1037.4	312.7	837.3	374.6
CAUSE 2	1144.2	1571.3	637.6	810.2	712.8	804.9	460.2	608.0	379.9	547.0	446.5	499.7	1197.3	2052.4	1499.0	1315.6
CAUSE 3	1794.7	0.	0.	0.	1515.0	0.	1445.1	0.	2119.4	808.5	1559.3	760.1	0.	0.	0.	0.
CAUSE 4	220.8	302.5	752.3	1088.3	386.4	480.9	641.1	806.9	468.7	619.9	321.5	316.4	0.	0.	0.	0.
CAUSE 5	1492.1	803.6	617.0	689.9	848.5	909.2	798.0	850.0	1654.1	2237.5	366.3	461.6	446.6	404.7	462.2	599.4
CAUSE 6	0.	0.	6044.2	0.	1979.3	972.8	0.	0.	0.	0.	658.9	1.7	0.	0.	0.	0.
CAUSE 7	0.	0.	4268.9	171.1	3551.9	0.	0.	0.	2606.5	3405.1	1556.9	1228.9	1079.1	0.	0.	0.
CAUSE 8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 9	5588.9	0.	0.	0.	1592.6	1290.9	6220.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	540.7	0.	0.	0.
CAUSE 12	0.	0.	3112.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 13	272.6	0.	0.	0.	0.	0.	0.	0.	273.2	345.9	0.	0.	0.	0.	0.	0.
CAUSE 14	312.5	0.	0.	0.	0.	0.	115.3	0.	10.1	0.	1.1	0.	0.	0.	0.	0.
CAUSE 15	5512.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 16	3936.5	0.	3340.8	0.	0.	0.	8137.4	0.	0.	0.	0.7	0.	0.	0.	0.	0.

DATE

FILMED

10/17/94

END

