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

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AUTHOR

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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. Scrums	

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

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OPERATIONS RESEARCH & SYNTHESIS

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APRIL 1961 TO MAY 15 1962

REACTOR 1 OUTAGE FUNCTION EXPECTATION REPORT

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 42 IN TUBE COUNT.

** 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	30	0	0	2	12	1	0	0	0	0	0	0	0	3	20	20	8	18	0	0	31
FUNCTION 2	8	18	0	0	0	0	0	0	0	0	0	0	0	0	11	11	5	7	0	0	25
FUNCTION 3	1	0	2	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	2
FUNCTION 4	4	0	0	5	0	2	1	4	1	0	0	0	0	0	0	4	2	4	0	0	6
FUNCTION 5	21	1	1	0	14	13	1	30	7	0	0	0	0	0	32	33	4	28	0	0	29
FUNCTION 6	3	0	0	0	0	10	0	11	12	0	1	1	0	1	12	12	4	11	1	0	13
FUNCTION 7	0	0	0	0	0	0	1	4	1	0	0	0	0	1	4	4	0	2	0	0	1
FUNCTION 8	13	0	0	0	2	0	0	44	11	1	0	1	2	0	30	32	8	18	0	0	0
FUNCTION 9	0	0	0	0	0	0	0	1	12	0	0	0	0	0	3	3	0	1	0	0	0
FUNCTION 10	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	2	0	0	0	0
FUNCTION 11	7	0	0	0	0	0	0	3	0	0	10	1	0	0	3	4	1	2	0	0	0
FUNCTION 12	8	6	0	0	1	2	0	2	1	0	1	5	0	0	6	6	2	5	0	0	4
FUNCTION 13	0	0	0	0	0	0	0	0	0	0	0	4	9	0	9	9	0	3	0	0	0
FUNCTION 14	5	0	0	0	0	0	0	0	0	0	0	0	3	5	3	3	0	3	0	0	1
FUNCTION 15	27	3	1	3	8	7	1	11	3	0	2	2	3	0	0	0	0	0	0	0	0
FUNCTION 16	27	2	0	3	8	7	1	13	3	0	1	4	2	0	0	0	0	0	0	0	0

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FUNCTION 18	23	1	1	0	7	5	1	16	2	0	1	1	1	0	0	0	0	0	0
FUNCTION 19	0	0	0	0	1	1	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
FUNCTION 21	4	0	0	0	0	5	0	2	2	0	4	0	0	5	5	2	4	0	8
FUNCTION 22	0	0	0	0	0	0	0	1	1	3	0	2	0	0	0	0	0	0	0

SECONDARY FUNCTION NUMBER	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FUNCTION 1															
TOT. HOURS OWN	272.4	0.	0.	0.	0.	0.	0.	0.	0.	1.0	9.7	1.0	0.	0.	0.
INCIDENTS	30	0.	0.	0.	0.	0.	0.	0.	0.	1.0	0.8	0.2	0.	0.	0.
AVERAGE QOWN	9.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2	0.1	0.	0.	0.
VARIANCE	46.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	0.3	0.1	0.	0.	0.
STD. DEVIATION	6.8	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	0.5	0.1	0.	0.	0.
FUNCTION 2															
TOT. HOURS OWN	17.6	17.9	7.7	17.2	0.	0.	0.	0.	5576.	0.	0.	0.	0.	0.	0.
INCIDENTS	20	20	1.0	1.0	0.	0.	0.	0.	31	0.	0.	0.	0.	0.	0.
AVERAGE QOWN	0.9	0.9	1.0	1.0	0.	0.	0.	0.	180.	0.	0.	0.	0.	0.	0.
VARIANCE	0.2	0.4	0.4	0.3	-0.	-0.	-0.	-0.	37072.	-0.	-0.	-0.	-0.	-0.	-0.
STD. DEVIATION	0.5	0.6	0.7	0.7	-0.	-0.	-0.	-0.	193.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 3															
TOT. HOURS OWN	40.6	55.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	6	18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE QOWN	5.1	3.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	15.0	5.5	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD. DEVIATION	3.9	2.3	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 4															
TOT. HOURS OWN	3.4	4.2	4.7	1.9	0.	0.	0.	0.	756.	0.	0.	0.	0.	0.	0.
INCIDENTS	11	17	3	0.3	0.	0.	0.	0.	23	0.	0.	0.	0.	0.	0.
AVERAGE QOWN	0.3	0.4	0.9	0.3	0.	0.	0.	0.	30.	0.	0.	0.	0.	0.	0.
VARIANCE	0.0	0.0	0.4	0.1	-0.	-0.	-0.	-0.	7451.	-0.	-0.	-0.	-0.	-0.	-0.
STD. DEVIATION	0.0	0.2	0.6	0.2	-0.	-0.	-0.	-0.	27.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 5															
TOT. HOURS OWN	0.7	0.	4.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	1	0.	2.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE QOWN	0.7	0.	2.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.	-0.	1.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD. DEVIATION	0.	-0.	1.3	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 6															
TOT. HOURS OWN	0.2	0.3	0.1	0.1	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.
INCIDENTS	1	1	1	1	0.	0.	0.	0.	2	0.	0.	0.	0.	0.	0.
AVERAGE QOWN	0.2	0.3	0.1	0.1	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.

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FUNCTION 4
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

7.4	0.	0.	14.3	0.	4.8	2.5	39.3	0.7	0.	0.	0.	0.	0.
4	0	0	5	0	2	1	6	1	0	0	0	0	0
1.3	0.	0.	2.9	0.	2.4	2.5	6.5	0.7	0.	0.	0.	0.	0.
1.3	-0.	-0.	4.3	-0.	0.1	0.	31.0	0.	-0.	-0.	-0.	-0.	-0.
1.2	-0.	-0.	2.1	-0.	0.3	0.	5.6	0.	-0.	-0.	-0.	-0.	-0.

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FUNCTION 4
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

13.7	12.6	4.5	4.3	0.	0.	6.
6	6	2	4	0	0	6
2.3	2.1	2.2	1.1	0.	0.	1.
1.2	1.1	2.6	0.5	-0.	-0.	0.
1.1	1.0	1.6	0.7	-0.	-0.	0.

FUNCTION 5
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

153.1	0.5	0.3	0.	117.2	58.7	4.0	163.9	4.0	0.	0.	0.	0.	0.
21	1	1	0	16	13	1	30	7	0	0	0	0	0
7.3	0.5	0.3	0.	7.3	4.5	4.0	5.5	0.6	0.	0.	0.	0.	0.
39.1	0.	0.	-0.	32.1	5.8	0.	22.3	0.2	-0.	-0.	-0.	-0.	-0.
4.2	0.	0.	-0.	5.7	2.4	0.	4.7	0.4	-0.	-0.	-0.	-0.	-0.

FUNCTION 5
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

67.5	82.9	15.5	39.5	0.	0.	71.
32	33	6	28	0	0	29
2.1	2.5	2.6	1.4	0.	0.	2.
1.9	3.4	1.2	1.7	-0.	-0.	6.
1.4	1.9	2.7	1.3	-0.	-0.	2.

FUNCTION 6
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

36.8	0.	0.	0.	0.	80.6	0.	451.6	51.4	0.	3.2	4.4	0.	6.3
3	0	0	0	0	10	0	11	12	0	1	1	0	1
12.3	0.	0.	0.	0.	8.1	0.	59.2	4.3	0.	3.2	6.4	0.	6.3
30.4	-0.	-0.	-0.	-0.	66.7	-0.	4400.9	22.7	-0.	0.	0.	-0.	0.
5.5	-0.	-0.	-0.	-0.	8.2	-0.	80.0	4.8	-0.	0.	0.	-0.	0.

FUNCTION 6
TCT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

27.3	38.2	2.7	29.4	12.6	0.	982.
12	12	4	11	1	0	13
2.3	3.2	0.7	2.7	12.4	0.	76.
0.9	3.3	0.5	8.6	0.	-0.	14787.
1.0	1.8	0.7	3.0	0.	-0.	122.

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FUNCTION	B
TOT-HOURS OWN	3.7
TOT-SDUCHS	11.8
INCIDENTS	5.9
AVERAGE DOWN	4.5
VARIANCE	2.6
STD-DEVIATION	2.3

[illegible]

FUNCTION	9
TOT. HOURS QWN	00.00
INCIDENTS	00.00
AVERAGE QWN	1.11
VARIANCE	00.00
STD. DEVIATION	00.00

FUNCTION	9
TOT-HOURS DOWN	0.0
INCIDENTS	0.0
AVERAGE DOWN	-0.0
VARIANCE	-0.0
STD-DEVIATION	0.0

FUNCTION 10

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AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 10
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 13
TGT.HOURS DOWN
INCIDENTS
AVERAGE DOWN

0.0
-0.0
-0.0

0.0
4.0
0.0
0.0
-0.0
-0.0

9.4
1.4
1.0
1.0

1.2
0.4
0.1
0.4

24.0
3.0
9.3
3.1

4.4
0.6
0.4
0.7

0.0
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FUNCTION 14
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

5.7 7.0 0.0 1.1 0.0 0.0
0.4 0.6 0.0 0.4 0.0 0.0
0.3 0.4 0.0 0.1 0.0 0.0
0.5 0.4 0.0 0.4 0.0 0.0

FUNCTION 14
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

28.5 0.0 0.0 0.0 0.0 0.0
5.7 0.0 0.0 0.0 0.0 0.0
124.1 0.0 0.0 0.0 0.0 0.0
11.1 0.0 0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

4.5 2.2 1.6 1.1

7.2 1.4 2.4 1.6

FUNCTION 14
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

4.4 5.3 0.0 1.7 0.0 0.0
1.5 1.8 0.0 0.4 0.0 0.0
4.4 3.8 0.0 0.0 0.0 0.0
2.1 3.0 0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

4.5 2.2 1.6 1.1

7.2 1.4 2.4 1.6

FUNCTION 15
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

82.4 0.5 0.2 6.7 0.0 0.0
27 0.2 0.2 2.3 0.0 0.0
3.1 0.0 0.0 2.3 0.0 0.0
2.4 0.0 0.0 2.3 0.0 0.0
1.7 0.0 0.0 2.3 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

4.5 2.2 1.6 1.1

7.2 1.4 2.4 1.6

FUNCTION 15
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

4.5 2.2 1.6 1.1

7.2 1.4 2.4 1.6

FUNCTION 14
TGT-HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

83.0 0.5 0.0 5.7 0.0 0.0
27 0.2 0.0 1.9 0.0 0.0
3.1 0.0 0.0 0.9 0.0 0.0
4.0 0.0 0.0 0.9 0.0 0.0
2.0 0.0 0.0 1.0 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

4.5 2.2 1.6 1.1

7.2 1.4 2.4 1.6

INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 17
TCT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 17
TCT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 18
TCT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 18
TCT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 19
TCT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 19
TCT. HOURS DOWN
INCIDENTS

DECLASSIFIED

STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.							
FUNCTION 20														
TGT.HOURS OWN	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.
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 20														
TGT.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.	-0.							
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.							
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.							
FUNCTION 21														
TGT.HOURS OWN	28.5	0.	0.	0.	0.	20.4	0.	49.4	4.9	0.	19.5	0.	0.	0.
INCIDENTS	7.4	0.	0.	0.	0.	4.1	0.	24.7	2.4	0.	4.9	0.	0.	0.
AVERAGE DOWN	43.2	-0.	-0.	-0.	-0.	7.9	-0.	253.4	1.4	-0.	14.5	-0.	-0.	-0.
VARIANCE	4.4	-0.	-0.	-0.	-0.	2.8	-0.	16.0	1.2	-0.	3.8	-0.	-0.	-0.
STD.DEVIATION	4.4	-0.	-0.	-0.	-0.	2.8	-0.	16.0	1.2	-0.	3.8	-0.	-0.	-0.
FUNCTION 21														
TGT.HOURS OWN	5.4	5.4	1.4	3.2	0.	0.	870.							
INCIDENTS	1.1	1.2	0.7	0.8	-0.	-0.	109.							
AVERAGE DOWN	0.3	0.4	0.3	0.7	-0.	-0.	183.1							
VARIANCE	0.1	0.4	0.1	0.7	-0.	-0.	135.							
STD.DEVIATION	0.1	0.4	0.1	0.7	-0.	-0.	135.							
FUNCTION 22														
TGT.HOURS OWN	0.	0.	0.	0.	0.	0.	0.	1.5	0.5	2.5	0.	3.7	0.	0.
INCIDENTS	0.	0.	0.	0.	0.	0.	0.	1.5	0.5	2.5	0.	3.7	0.	0.
AVERAGE DOWN	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	0.	0.	-0.	1.8	-0.	-0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	0.	0.	-0.	2.6	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	0.	0.	-0.	1.6	-0.	-0.
FUNCTION 22														
TGT.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.	-0.							
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.							
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.							

DECLASSIFIED

---909 TOTAL DELINEATION---

FUNCTION	1	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASES/SECONDARIES	284.5	SUM 40.4	5578.
NUMBER OF INCIDENTS	34	CNT 34	34
AVERAGE HOURS REQD.	8.4	AVG	164.
VARIANCE	121.8	VARIANCE	
STD. DEVIATION	11.0	STD. DEVIATION	

FUNCTION	SUM	AVERAGE	VARIANCE	STD. DEVIATION	TOTAL
SUBBASISCONCARRIES	94.2				756.
NUMBER OF INCIDENTS	26				26
AVERAGE HOURS REQD.	3.7				29.
VARIANCE	23.1				
STD. DEVIATION	4.8				

FUNCTION	3	SUM OF DELAYS	DELAY TOTALS	TOTAL
SUM BASIC CONCARRIES	5.8	SUM OF DELAYS	0.7	2.2
NUMBER OF INCIDENTS	2	INCIDENTS	2	2
AVERAGE HOURS REQ.	2.9	AVERAGE	0.35	1.1
VARIANCE	22.4	VARIANCE	0.15	
STD. DEVIATION	4.8	STD. DEVIATION	0.35	

[illegible]

FUNCTION	5	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASECONCERNARIES	501.7	SUM	71.
NUMBER OF INCIDENTS	34	CNT	34
AVERAGE HOURS REQD.	14.8	AVG	2.

DECLASSIFIED

1

FUNCTION	SUM OF DELAYS	TOTAL	DELAY TOTALS	TUBES
SUM BASE CONCARRIES	834.3		SUM	982.
NUMBER OF INCIDENTS	13		CNT	13
AVERAGE HOURS REQD.	64.2		AVG	76.
VARIANCE	11764.9			
STD. DEVIATION	108.5			

FUNCTION	7	ASSOCIATED DELAY	TOTALS	TOTAL TUBES
SUMBASE/SECONDARIES	43.2	SUM OF DELAYS	6.6	5
NUMBER OF INCIDENTS	5	INCIDENTS	5	5
AVERAGE HOURS REQD.	8.6	AVERAGE	1.3	1
VARIANCE	123.1	VARIANCE	1.0	
STD. DEVIATION	11.1	STD. DEVIATION	1.0	

FUNCTION	21	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM BASES	121.7	SUM 16.1	870.9
SECONDRARIES	9	CNT 9	9
NUMBER OF INCIDENTS	13.4	AVG	97.
NUMBER OF HOURS REQD.	424.7	1.8	
VARIANCE	20.7	4.0	
STD. DEVIATION		2.0	

REACTOR 2 OUTAGE FUNCTION EXPECTATION REPORT

APRIL 1961 TO MAY 15 1962

NY-57168
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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.

•• 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	19	0	0	0	0	0	0	0	0	0	0	0	0	0	13	14	7	5	0	0	18
FUNCTION	2	9	15	0	0	0	0	0	0	0	0	0	0	0	0	15	17	3	3	0	0	20
FUNCTION	3	0	0	1	0	0	1	0	2	0	0	0	0	0	0	1	1	0	0	0	0	2
FUNCTION	4	9	0	0	9	0	2	0	8	0	0	0	0	0	0	11	11	0	1	0	0	6
FUNCTION	5	12	0	0	0	3	1	0	12	0	0	0	0	0	0	11	12	2	3	0	0	6
FUNCTION	6	3	0	0	0	0	3	0	7	0	0	0	0	0	0	6	6	0	1	0	0	8
FUNCTION	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION	8	1	0	0	0	0	0	0	33	13	4	0	0	2	0	25	28	2	2	1	0	0
FUNCTION	9	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION	10	1	0	0	0	0	0	0	1	1	3	1	1	0	0	1	1	0	0	0	0	0
FUNCTION	11	1	0	0	0	0	0	0	0	0	0	9	0	0	0	3	3	0	0	0	0	0
FUNCTION	12	10	5	0	0	0	0	0	13	0	0	2	5	0	0	14	15	0	1	1	0	1
FUNCTION	13	0	0	0	0	0	0	0	0	0	0	0	3	5	0	4	5	0	0	0	0	0
FUNCTION	14	1	1	0	0	1	0	0	2	0	0	0	1	8	8	0	1	0	0	0	0	0
FUNCTION	15	20	5	1	6	1	5	0	7	0	0	2	5	2	0	0	0	0	0	0	0	0
FUNCTION	16	21	6	1	6	1	5	0	9	0	0	2	6	3	1	0	0	0	0	0	0	0

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[REDACTED]

[REDACTED]

SECONDARY FUNCTION NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FUNCTION 1	15	16	17	18	19	20	21							
TCT-HOURS DOWN	254.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	13.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE DOWN	91.1	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
VARIANCE	9.5	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION														
FUNCTION 1	12.5	24.0	8.9	9.5	0.	0.	5020.							
TCT-HOURS DOWN	13	14	1.3	1.7	0.	0.	13							
INCIDENTS	1.0	1.7	0.5	0.7	0.	0.	279.							
AVERAGE DOWN	0.23	1.0	0.7	0.6	-0.	-0.	4949.							
VARIANCE	0.5	1.0	0.7	0.6	-0.	-0.	222.							
STD.DEVIATION														
FUNCTION 2	95.3	116.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TCT-HOURS DOWN	10.4	9.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	48.9	30.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE DOWN	1.0	5.5	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
VARIANCE														
STD.DEVIATION														
FUNCTION 2	10.4	21.8	4.9	5.1	0.	0.	2543.							
TCT-HOURS DOWN	15	17	1.4	1.7	0.	0.	20							
INCIDENTS	0.7	1.3	0.4	0.4	0.	0.	128.							
AVERAGE DOWN	0.1	0.6	0.4	0.4	-0.	-0.	4427.							
VARIANCE	0.4	0.6	2.1	1.4	-0.	-0.	67.							
STD.DEVIATION														
FUNCTION 3	0.	0.	0.5	0.	0.	0.	0.	1.1	0.	0.	0.	0.	0.	0.
TCT-HOURS DOWN	0.	0.	0.5	0.	0.	0.	0.	0.5	0.	0.	0.	0.	0.	0.
INCIDENTS	-0.	-0.	0.	-0.	-0.	-0.	-0.	0.1	0.	0.	0.	0.	0.	0.
AVERAGE DOWN	-0.	-0.	0.	-0.	-0.	-0.	-0.	0.4	0.	0.	0.	0.	0.	0.
VARIANCE														
STD.DEVIATION														
FUNCTION 3	0.1	0.2	0.	0.	0.	0.	0.	2.2	0.	0.	0.	0.	0.	0.
TCT-HOURS DOWN	0.1	0.2	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
INCIDENTS	0.1	0.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE DOWN														

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FUNCTION 4	40.0	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	4.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	30.1	-0.0	-0.0	-0.0	-0.0	47.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	5.5	-0.0	-0.0	-0.0	-0.0	4.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION												

FUNCTION 4	20.3	19.0	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	1.0	1.7	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	2.3	1.9	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	1.5	1.4	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION												

FUNCTION 5	75.7	0.0	0.0	0.0	0.0	93.1	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	12	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	4.3	-0.0	-0.0	-0.0	-0.0	30.5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	32.8	-0.0	-0.0	-0.0	-0.0	5.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION	5.7	-0.0	-0.0	-0.0	-0.0							

FUNCTION 5	24.1	33.3	1.4	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	11	12	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	2.2	2.8	1.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	0.9	2.8	1.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION		1.7										

FUNCTION 6	28.8	0.0	0.0	0.0	0.0	127.7	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	9.0	0.0	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	134.7	-0.0	-0.0	-0.0	-0.0	987.1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	11.1	-0.0	-0.0	-0.0	-0.0	31.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION												

FUNCTION 4	7.5	11.9	0.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DWN												
INCIDENTS	1.4	2.0	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DQWN	1.2	3.0	-0.0	-0.0	-0.0	1482.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	1.2	2.0	-0.0	-0.0	-0.0	41.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION												

TOT. HOURS OWN
INCIDENTS
AVERAGE DCWN
VARIANCE
STD. DEVIATION

TGT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD-DEVIATION

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

Year	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																																							
27.4	27.2	27.1	27.0	26.9	26.8	26.7	26.6	26.5	26.4	26.3	26.2	26.1	26.0	25.9	25.8	25.7	25.6	25.5	25.4	25.3	25.2	25.1	25.0	24.9	24.8	24.7	24.6	24.5	24.4	24.3	24.2	24.1	24.0	23.9	23.8	23.7	23.6	23.5	23.4	23.3	23.2	23.1	23.0	22.9	22.8	22.7	22.6	22.5	22.4	22.3	22.2	22.1	22.0	21.9	21.8	21.7	21.6	21.5	21.4	21.3	21.2	21.1	21.0	20.9	20.8	20.7	20.6	20.5	20.4	20.3	20.2	20.1	20.0	19.9	19.8	19.7	19.6	19.5	19.4	19.3	19.2	19.1	19.0	18.9	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.8	17.7	17.6	17.5	17.4	17.3	17.2	17.1	17.0	16.9	16.8	16.7	16.6	16.5	16.4	16.3	16.2	16.1	16.0	15.9	15.8	15.7	15.6	15.5	15.4	15.3	15.2	15.1	15.0	14.9	14.8	14.7	14.6	14.5	14.4	14.3	14.2	14.1	14.0	13.9	13.8	13.7	13.6	13.5	13.4	13.3	13.2	13.1	13.0	12.9	12.8	12.7	12.6	12.5	12.4	12.3	12.2	12.1	12.0	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.0	10.9	10.8	10.7	10.6	10.5	10.4	10.3	10.2	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6</

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 10

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FUNCTION 16
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

1234567890
1234567890

100-443887-100

200

100

10-0-01

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FUNCTION 19
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

FUNCTION 19
TOT.HOURS DWN
INCIDENTS

FUNCTION 19
TGT.HOURS DWN
INCIDENTS

$-0. -0. -0. -0. -0. -0.$

[illegible][illegible][illegible][illegible][illegible][illegible]

FUNCTION	5	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM BASIC SECONDARIES	214.7	SUM 71.1	7
NUMBER OF INCIDENTS	14	CNT 14	14
AVERAGE HOURS REQD.	15.5	AVG 5.1	1

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FUNCTION	6	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASES	168.5	SUM 21.7	143
NUMBER OF INCIDENTS	8	CNT 8	8
NUMBER OF HOURS REQD.	21.1	AVG 2.7	16
VARIANCE	1671.0	VARIANCE 14.5	
STD. DEVIATION	41.3	STD. DEVIATION 3.8	

FUNCTION	7	ASSOCIATED DELAY	TOTALS	TOTAL TUBES
SUMBASIS	0.	0.	SUM	0.
SECONDRARIES	0.	0.	CNT	0.
NUMBER OF INCIDENTS	0.	0.	AVG	0.
AVERAGE HOURS REQD.	-0.	-0.		
VARIANCE	-0.	-0.		
STD. DEVIATION	-0.	-0.		

FUNCTION	SUM OF DELAYS	TOTAL TUBES
FUNCTION 21	119.1	1885.
SUMBASES	10	10
CASES	11.9	189.
CONCERNARY	227.3	
NUMBER OF INCIDENTS	15.1	
AVERAGE HOURS REQD.		
VARIANCE		
STD. DEVIATION		

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REACTOR 3 OUTAGE FUNCTION EXPECTATION REPORT

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).

** 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	32	0	0	0	1	2	1	0	0	0	0	0	0	0	23	29	9	11	0	0	35
FUNCTION 2	11	23	0	0	0	0	0	0	0	0	0	0	0	0	18	18	0	4	0	0	34
FUNCTION 3	8	0	3	0	0	0	0	2	0	0	0	0	0	0	2	3	0	1	0	0	11
FUNCTION 4	6	0	0	7	0	0	0	4	1	0	0	0	0	0	7	9	2	3	0	0	12
FUNCTION 5	13	0	0	0	17	4	0	12	1	0	0	0	0	0	28	28	10	12	0	0	28
FUNCTION 6	1	0	0	0	0	19	0	4	1	0	0	0	0	0	20	20	2	4	0	1	23
FUNCTION 7	0	0	0	0	0	0	9	0	0	0	0	0	0	0	5	5	0	0	0	0	6
FUNCTION 8	8	0	0	0	0	0	0	44	17	7	0	0	3	0	32	33	0	10	0	0	0
FUNCTION 9	0	0	0	0	0	0	0	0	22	0	0	0	0	0	4	8	0	0	0	0	3
FUNCTION 10	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0
FUNCTION 11	7	0	0	0	0	0	0	0	0	0	11	0	0	0	2	4	1	0	0	0	0
FUNCTION 12	3	0	0	0	0	1	0	0	0	0	5	13	0	0	4	4	1	1	0	0	4
FUNCTION 13	3	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
FUNCTION 14	7	0	0	0	0	0	0	1	1	0	1	1	3	8	8	10	0	4	0	0	0
FUNCTION 15	31	7	0	3	13	13	5	13	5	0	1	2	0	1	0	0	0	0	0	0	0
FUNCTION 16	35	7	0	3	13	13	5	13	6	1	2	2	0	1	0	0	0	0	0	0	0

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FUNCTION 18	16	2	0	1	3	4	0	6	0	1	0	1	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	
FUNCTION 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FUNCTION 21	4	0	0	0	1	11	0	0	0	0	4	0	0	0	4	5	3	2	0	14
FUNCTION 22	1	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	0	0	0	

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SECONDARY
FUNCTION NUMBER

15 1 2 3 4 5 6 7 8 9 10 11 12 13 14

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FUNCTION 1
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

349.1	0.	0.	0.	1.7	3.7	0.1	0.	0.	0.	0.	0.	0.	0.
32	0	0	0	1	2	1	0	0	0	0	0	0	0
10.9	0.	0.	0.	1.7	1.6	0.1	0.	0.	0.	0.	0.	0.	0.
48.4	-0.	-0.	-0.	0.	2.4	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
8.1	-0.	-0.	-0.	0.	1.4	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 1
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

20.0	31.7	15.9	8.4	0.	0.	4447.
27	29	9	11	0	0	35
0.1	1.1	1.8	0.8	0.	0.	133.
0.3	0.5	4.3	0.4	-0.	-0.	18321.
0.5	0.7	2.1	0.8	-0.	-0.	135.

FUNCTION 2
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

34.9	53.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	23	0	0	0	0	0	0	0	0	0	0	0	0
3.4	2.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.4	2.9	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
0.9	1.7	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 2
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

5.5	4.4	0.	2.7	0.	0.	750.
18	18	0	4	0	0	34
0.3	0.4	0.	0.4	0.	0.	22.
0.0	0.0	-0.	0.2	-0.	-0.	710.
0.2	0.2	-0.	0.5	-0.	-0.	27.

FUNCTION 3
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

8.9	0.	3.0	0.	0.	0.	0.	3.4	0.	0.	0.	0.	0.	0.
8	0	3	0	0	0	0	1	0	0	0	0	0	0
1.1	0.	1.0	0.	0.	0.	0.	0.5	-0.	-0.	-0.	-0.	-0.	-0.
1.2	-0.	0.4	-0.	-0.	-0.	-0.	0.4	-0.	-0.	-0.	-0.	-0.	-0.
1.1	-0.	0.4	-0.	-0.	-0.	-0.	0.4	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 3
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN

0.4	0.4	0.	0.9	0.	0.	60.
1	3	0	1	0	0	11
0.2	0.2	0.	0.9	0.	0.	5.

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[illegible]

FUNCTION	4	12.4	0.3	10.3	0.0	0.0	12.3
TOY-HOURS DOWN	6.7	12.4	0.3	10.3	0.0	0.0	12.3
INCIDENTS	7	9	1	4	0	0	11
AVERAGE DOWN	0.9	1.9	0.2	3.4	0.0	0.0	1.0
VARIANCE	1.2	2.7	0.0	7.8	-0.0	-0.0	0.0
STO.DEVIATION	1.1	1.7	0.1	2.8	-0.0	-0.0	0.0

[illegible]

FUNCTION	5						
TOT-HOURS OWN	39.9	50.3	11.9	6.9	0.0	0.0	70.8
INCIDENTS	28	28	10	12	0	0	70.8
AVERAGE OWN	1.4	1.8	1.3	6.4	0	0	70.8
VARIANCE	0.4	1.2	1.0	0.7	-0	-0	70.8
STD.DEVIATION	0.6	1.1	1.0	0.8	-0	-0	70.8

[illegible][illegible]

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FUNCTION	7
TOT.HOURS QDWN	0.
INCIDENTS	0.
AVERAGE QDWN	-0.
VARIANCE	-0.
STD.DEVIATION	-0.

[illegible]

FUNCTION	B
TCT.HOURS DOWN	32.7
INCIDENTS	40.8
AVERAGE DOWN	12.8
VARIANCE	3.7
STD.DEVIATION	

[illegible][illegible]

FUNCTION	9	184	3
TOT.HOURS QOWN	N-5	0.0	0.0
INCIDENTS	0.0	0.0	0.0
AVERAGE QDOWN	0.0	0.0	0.0
VARIANCE	0.0	0.0	0.0
STD.DEVIATION	0.0	0.0	0.0

FUNCTION 10

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AVERAGE DOWN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5	0.	0.	0.
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.1	-0.	-0.	-0.
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.0	-0.	-0.	-0.

FUNCTION 10														
TCT.HOURS OWN	0.	0.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0	1	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DOWN	-0.	0.2	-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.

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FUNCTION 11														
TCT.HOURS OWN	12.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.7	0.	0.	0.
INCIDENTS	1	0	0	0	0	0	0	0	0	0	11	0	0	0
AVERAGE DOWN	1.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2	-0.	-0.	-0.
VARIANCE	16.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.7	-0.	-0.	-0.
STD.DEVIATION	4.0	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6	-0.	-0.	-0.

FUNCTION 11														
TCT.HOURS OWN	0.5	1.0	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	2	4	1	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DOWN	0.4	0.2	0.4	-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.	-0.
STD.DEVIATION	0.1	0.1	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 12														
TCT.HOURS OWN	8.1	0.	0.	0.	0.	1.2	0.	0.	0.	0.	8.5	24.8	0.	0.
INCIDENTS	3	0	0	0	0	1	0	0	0	0	3	13	0	0
AVERAGE DOWN	2.1	-0.	-0.	-0.	-0.	1.2	-0.	-0.	-0.	-0.	1.7	2.1	-0.	-0.
VARIANCE	7.1	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	1.2	3.5	-0.	-0.
STD.DEVIATION	2.6	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	1.1	1.9	-0.	-0.

FUNCTION 12														
TCT.HOURS OWN	1.5	2.3	3.4	2.0	0.	0.	40.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	4	4	1	1	0	0	4	0	0	0	0	0	0	0
AVERAGE DOWN	0.2	0.4	3.4	2.0	-0.	-0.	10.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
VARIANCE	0.0	0.1	0.	0.	-0.	-0.	140.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.2	0.3	0.	0.	-0.	-0.	13.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 13														
TCT.HOURS OWN	2.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0	0.	0.5	0.
INCIDENTS	3	0	0	0	0	0	0	0	0	0	1	0	1	0
AVERAGE DOWN	0.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0	0.	0.5	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.

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FUNCTION 13
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
-0.0 -0.0 -0.0 -0.0 -0.0 -0.0
-0.0 -0.0 -0.0 -0.0 -0.0 -0.0

FUNCTION 14
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

44.2 0.0 0.0 0.0 0.0 0.0
4.7 0.0 0.0 0.0 0.0 0.0
6.3 0.0 0.0 0.0 0.0 0.0
55.9 -0.0 -0.0 -0.0 -0.0 -0.0
7.3 -0.0 -0.0 -0.0 -0.0 -0.0

FUNCTION 14
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

6.5 9.5 0.0 0.0 0.0 0.0
8 10 0.0 0.0 0.0 0.0
0.6 0.9 0.0 0.0 0.0 0.0
0.4 1.0 -0.0 -0.0 -0.0 -0.0
0.6 1.0 -0.0 -0.0 -0.0 -0.0

FUNCTION 15
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

45.9 1.6 0.0 0.0 0.0 0.0
31 0.2 0.0 0.0 0.0 0.0
2.1 0.0 0.0 0.0 0.0 0.0
1.4 0.1 0.0 0.0 0.0 0.0

FUNCTION 15
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
-0.0 -0.0 -0.0 -0.0 -0.0 -0.0
-0.0 -0.0 -0.0 -0.0 -0.0 -0.0

FUNCTION 16
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

91.4 2.6 0.0 0.0 0.0 0.0
35 0.4 0.0 0.0 0.0 0.0
2.4 0.0 0.0 0.0 0.0 0.0
2.1 0.1 0.0 0.0 0.0 0.0

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[illegible]

FUNCTION	5	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS/CONDUITS	444.0	SUM 109.0	70
NUMBER OF INCIDENTS	29	CNT 29	29
AVERAGE HOURS REQD.	15.4	AVG 3.6	2

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FUNCTION 4
SUMBASIS6SECONCARIES
NUMBER OF INCIDENTS 702.8
AVERAGE HOURS REQD. 23
VARIANCE 30.4
STD. DEVIATION 3876.4
42.3

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 94.0
INCIDENTS 23
AVERAGE 4.1
VARIANCE 50.0
STD. DEVIATION 7.1

TOTAL TUBES
SUM 878.
CNT 23
AVG 38.

FUNCTION 7
SUMBASIS6SECONCARIES
NUMBER OF INCIDENTS 24.5
AVERAGE HOURS REQD. 2.9
VARIANCE 13.7
STD. DEVIATION 3.7

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 2.6
INCIDENTS 0.9
AVERAGE 0.3
VARIANCE 0.1
STD. DEVIATION 0.3

TOTAL TUBES
SUM 14.
CNT 9
AVG 2.

FUNCTION 21
SUMBASIS6SECONCARIES
NUMBER OF INCIDENTS 89.2
AVERAGE HOURS REQD. 16
VARIANCE 5.6
STD. DEVIATION 47.0
4.9

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 6.8
INCIDENTS 16
AVERAGE 0.4
VARIANCE 0.6
STD. DEVIATION 0.8

TOTAL TUBES
SUM 819.
CNT 16
AVG 51.

APRIL 1961 TO MAY15 1962

REACTOR 4 OUTAGE FUNCTION EXPECTATION REPORT

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.

** 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	31	0	0	0	1	4	0	0	0	0	1	0	1	0	20	23	10	15	0	0	34
FUNCTION 2	11	19	0	1	0	4	0	0	0	0	0	0	0	0	26	26	5	13	0	0	32
FUNCTION 3	7	0	8	0	0	1	0	3	0	0	0	0	1	0	9	10	3	4	0	0	16
FUNCTION 4	11	2	0	11	0	4	1	8	0	0	0	0	0	1	14	14	3	12	0	0	15
FUNCTION 5	18	1	0	0	16	7	2	11	1	0	0	0	0	0	23	24	4	15	0	0	14
FUNCTION 6	13	7	1	0	1	14	0	11	1	0	0	2	0	0	16	17	5	10	0	0	17
FUNCTION 7	0	0	0	0	0	0	5	3	0	0	0	0	0	0	4	5	0	1	0	0	1
FUNCTION 8	2	0	0	0	0	0	0	40	11	2	0	1	1	0	29	33	4	12	0	0	0
FUNCTION 9	0	0	0	0	0	0	0	0	19	0	0	0	0	0	2	3	0	2	0	0	0
FUNCTION 10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
FUNCTION 11	2	0	0	0	0	0	0	0	0	0	8	0	0	0	4	4	0	4	0	0	0
FUNCTION 12	2	0	0	1	0	0	0	2	1	0	3	7	1	0	10	10	1	5	0	0	2
FUNCTION 13	0	0	0	0	0	0	0	0	0	0	1	3	2	0	4	4	0	0	0	0	0
FUNCTION 14	5	0	0	0	0	0	0	1	0	0	0	2	2	11	10	9	4	2	0	0	1
FUNCTION 15	24	13	3	8	10	11	6	14	1	1	5	1	1	2	0	0	0	0	0	0	0
FUNCTION 16	26	13	3	8	11	11	5	14	2	1	6	2	1	2	0	0	0	0	0	0	0

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SECONDARY
FUNCTION NUMBER

	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FUNCTION 1	15	16	17	18	19	20	21								
TOT.HOURS DWN	214.2	0.	0.	0.	0.5	13.0	0.	0.	0.	0.	0.	0.9	0.	0.3	0.
INCIDENTS	31	0	0	0	1	6	0	0	0	0	0	1	0	1	0
AVERAGE DWN	4.9	0.	0.	0.	0.5	2.2	0.	0.	0.	0.	0.	0.9	0.	0.3	0.
VARIANCE	63.7	-0.	-0.	-0.	0.	1.8	-0.	-0.	-0.	-0.	-0.	0.	-0.	0.	-0.
STD.DEVIATION	8.0	-0.	-0.	-0.	0.	1.4	-0.	-0.	-0.	-0.	-0.	0.	-0.	0.	-0.

FUNCTION 1
TOT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

14.0	23.8	11.0	7.0	0.	0.	4567.
20	23	10	15	0	0	34
0.7	1.0	1.1	0.5	0.	0.	134.
0.3	0.6	1.1	0.3	-0.	-0.	50175.
0.5	0.8	1.0	0.4	-0.	-0.	243.

FUNCTION 2
TOT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

80.1	77.1	0.	11.6	0.	17.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	19	0	1	0	4	0	0	0	0	0	0	0	0	0	0
7.3	4.1	0.	11.4	0.	4.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23.1	4.6	-0.	0.	-0.	3.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
4.8	2.1	-0.	0.	-0.	1.8	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 2
TOT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

16.2	21.3	5.3	7.1	0.	0.	1409.
24	26	5	13	0	0	32
0.4	0.8	1.1	0.4	0.	0.	44.
0.2	0.5	0.4	0.4	-0.	-0.	1402.
0.5	0.7	0.4	0.4	-0.	-0.	37.

FUNCTION 3
TOT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

20.5	0.	24.0	0.	0.	1.5	0.	5.9	0.	0.	0.	0.	0.2	0.	0.	0.
7	0	8	0	0	1	0	3	0	0	0	0	1	0	0	0
2.9	0.	3.4	0.	0.	1.5	0.	2.0	0.	0.	0.	0.	0.2	0.	0.	0.
6.4	-0.	10.1	-0.	-0.	0.	-0.	0.9	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.
2.9	-0.	3.2	-0.	-0.	0.	-0.	1.0	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.

FUNCTION 3
TOT.HOURS DWN
INCIDENTS
AVERAGE DWN

4.4	4.4	3.3	1.2	0.	0.	216.
9	10	3	4	0	0	16
0.5	0.6	1.1	0.3	0.	0.	14.

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FUNCTION 4	18.0	1.3	0.0	39.5	0.0	15.4	1.7	40.5	0.0	0.0	0.0	0.0	237.8
TOT.HOURS OWN	11	0.6	0.0	5.0	0.0	3.9	7.7	5.1	0.0	0.0	0.0	0.0	237.8
INCIDENTS	3.3	0.2	0.0	4.0	0.0	2.3	0.0	18.4	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	1.6	0.3	0.0	2.0	0.0	1.5	0.0	4.3	0.0	0.0	0.0	0.0	0.0
VARIANCE													
STD.DEVIATION													

FUNCTION 4	24.3	20.2	1.8	7.9	0.0	0.0	14.0						
TOT.HOURS OWN	14	1.4	0.0	0.3	0.0	0.0	1.5						
INCIDENTS	1.5	1.1	0.0	0.3	0.0	0.0	0.0						
AVERAGE DOWN	2.0	1.1	0.0	0.3	0.0	0.0	0.0						
VARIANCE	1.4	1.0	0.0	0.3	0.0	0.0	0.0						
STD.DEVIATION													

FUNCTION 5	43.4	0.2	0.0	0.0	116.7	21.7	10.0	54.3	0.0	0.0	0.0	0.0	0.0
TOT.HOURS OWN	18	0.2	0.0	0.0	1.4	3.1	5.0	1.1	0.0	0.0	0.0	0.0	0.0
INCIDENTS	5.5	0.2	0.0	0.0	7.5	4.8	19.2	4.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	6.1	0.0	0.0	0.0	24.2	2.2	4.4	2.0	0.0	0.0	0.0	0.0	0.0
VARIANCE	2.8	0.0	0.0	0.0	4.9		1.4		0.0	0.0	0.0	0.0	0.0
STD.DEVIATION													

FUNCTION 5	22.5	23.5	9.4	9.9	0.0	0.0	26.0						
TOT.HOURS OWN	23	2.4	1.0	1.5	0.0	0.0	1.4						
INCIDENTS	1.0	1.0	1.0	0.7	0.0	0.0	2.0						
AVERAGE DOWN	0.3	0.2	2.0	0.3	0.0	0.0	1.5						
VARIANCE	0.4	0.3	1.7	0.3	0.0	0.0	1.1						
STD.DEVIATION													

FUNCTION 6	44.0	19.7	1.5	0.0	1.1	113.1	0.0	566.4	0.0	0.0	0.0	0.0	0.0
TOT.HOURS OWN	13	7.7	1.5	0.0	1.1	9.1	0.0	1.1	0.0	0.0	0.0	0.0	0.0
INCIDENTS	5.5	2.2	1.5	0.0	1.1	7.7	0.0	5.5	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	9.7	3.5	0.0	0.0	0.0	101.5	0.0	1.1	0.0	0.0	0.0	0.0	0.0
VARIANCE	3.1	1.9	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STD.DEVIATION													

FUNCTION 6	31.7	35.5	7.3	21.1	0.0	0.0	540.0						
TOT.HOURS OWN	14	1.7	1.5	1.0	0.0	0.0	1.7						
INCIDENTS	2.0	2.1	1.5	2.1	0.0	0.0	33.0						
AVERAGE DOWN	3.4	4.1	1.1	5.8	0.0	0.0	34.55						
VARIANCE	1.8	2.0	1.1	2.4	0.0	0.0	6.5						
STD.DEVIATION													

FUNCTION	7
TOT.HOURS DOWN	0.
INCIDENTS	0.
AVERAGE DOWN	0.
VARIANCE	-0.
STD. DEVIATION	-0.

FUNCTION 7	2.2	0.0	0.0	0.0	0.0	0.0
TOT.HOURS DOWN	2.2	0.0	0.0	0.0	0.0	0.0
INCIDENTS	4.4	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	0.4	0.0	0.0	0.0	0.0	0.0
VARIANCE	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

FUNCTION	B
TOT.HOURS DOWN	0.0
INCIDENTS	0.0
AVERAGE DOWN	0.0
VARIANCE	-1.0
STD.DEVIATION	-1.0

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FUNCTION	9
TOT. HOURS DOWN	000000
INCIDENTS	000000
AVERAGE DOWN	000000
VARIANCE	000000
STD. DEVIATION	000000

[illegible]

FUNCTION 10

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FUNCTION 13
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

2.7	2.3	0.	0.	0.	0.	0.
4	4	0	0	0	0	0
0.7	0.6	0.	0.	0.	0.	0.
0.0	0.1	-0.	-0.	-0.	-0.	-0.
0.2	0.2	-0.	-0.	-0.	-0.	-0.

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FUNCTION 14
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

50.4	0.	0.	0.	0.	0.	0.	3.4	0.	0.	0.	4.4	3.4	36.1
3	0	0	0	0	0	0	1	0	0	0	2	1	11
10.1	0.	0.	0.	0.	0.	0.	3.4	0.	0.	0.	4.4	1.4	3.5
140.3	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	3.4	1.4	3.5
11.0	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	2.4	2.0	0.1

FUNCTION 14
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

31.0	4.0	4.4	2.3	0.	0.	4.
10	9	4	2	0	0	1
3.1	0.7	1.7	1.1	0.	0.	6.
71.2	0.4	1.3	0.8	-0.	-0.	0.
0.4	0.6	1.2	0.9	-0.	-0.	0.

FUNCTION 15
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

79.7	7.0	1.4	13.4	9.2	12.4	2.2	14.4	0.2	0.1	0.9	0.4	0.5	0.4
24	13	3	6	10	11	4	14	1	1	5	1	1	2
3.3	0.5	0.6	1.7	0.9	1.1	0.4	1.0	0.2	0.1	0.2	0.4	0.3	0.2
10.0	0.2	0.1	2.9	0.3	0.9	0.0	0.8	0.2	0.1	0.0	0.2	0.1	0.0
3.2	0.4	0.4	1.7	0.5	0.9	0.2	0.9	0.	0.	0.1	0.	0.	0.1

FUNCTION 15
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

0.	0.	0.	0.	0.	0.	0.
0	0	0	0	0	0	0
0.	0.	0.	0.	0.	0.	0.
-0.	-0.	-0.	-0.	-0.	-0.	-0.
-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 16
TGT.HOURS DWN
INCIDENTS
AVERAGE DWN
VARIANCE
STD.DEVIATION

95.8	9.4	2.1	14.2	11.2	14.4	2.2	21.2	0.3	0.1	3.7	1.5	0.9	0.5
24	13	3	8	11	11	5	16	2	1	6	2	1	2
3.7	0.7	0.7	1.8	1.0	1.3	0.4	1.3	0.1	0.1	0.6	0.4	0.0	0.2
23.3	0.5	0.5	1.3	0.3	1.0	0.1	1.2	0.0	0.	0.7	0.2	0.	0.0
4.8	0.7	0.7	1.1	0.6	1.0	0.4	1.1	0.1	0.	0.9	0.5	0.	0.2

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VARIANCE

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SUB TOTAL DELINEATION

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FUNCTION 1		ASSOCIATED DELAY TOTALS		TOTAL TUBES
SUM#BASICS&SECCNARIES	228.9	SUM OF DELAYS	45.8	SUM 4567.
NUMBER OF INCIDENTS	34	INCIDENTS	34	CNT 34
AVERAGE HOURS REQD.	4.7	AVERAGE	1.4	AVG 134.
VARIANCE	105.4	VARIANCE	3.8	
STD. DEVIATION	10.3	STD.DEVIATION	2.0	

FUNCTION 2		ASSOCIATED DELAY TOTALS		TOTAL TUBES
SUM#BASICS&SECCNARIES	184.7	SUM OF DELAYS	50.5	SUM 1409.
NUMBER OF INCIDENTS	32	INCIDENTS	32	CNT 32
AVERAGE HOURS REQD.	5.8	AVERAGE	1.6	AVG 44.
VARIANCE	50.4	VARIANCE	2.1	
STD. DEVIATION	7.1	STD.DEVIATION	1.5	

FUNCTION 3		ASSOCIATED DELAY TOTALS		TOTAL TUBES
SUM#BASICS&SECCNARIES	57.1	SUM OF DELAYS	15.3	SUM 216.
NUMBER OF INCIDENTS	19	INCIDENTS	19	CNT 19
AVERAGE HOURS REQD.	3.0	AVERAGE	0.8	AVG 11.
VARIANCE	17.0	VARIANCE	1.4	
STD. DEVIATION	4.1	STD.DEVIATION	1.2	

FUNCTION 4		ASSOCIATED DELAY TOTALS		TOTAL TUBES
SUM#BASICS&SECCNARIES	360.4	SUM OF DELAYS	94.2	SUM 14.
NUMBER OF INCIDENTS	20	INCIDENTS	20	CNT 20
AVERAGE HOURS REQD.	18.0	AVERAGE	2.7	AVG 1.
VARIANCE	3039.3	VARIANCE	5.3	
STD. DEVIATION	55.1	STD.DEVIATION	2.3	

FUNCTION 5		ASSOCIATED DELAY TOTALS		TOTAL TUBES
SUM#BASICS&SECCNARIES	267.8	SUM OF DELAYS	45.5	SUM 26.
NUMBER OF INCIDENTS	27	INCIDENTS	27	CNT 27
AVERAGE HOURS REQD.	9.9	AVERAGE	2.4	AVG 1.
VARIANCE	141.2	VARIANCE	2.4	
STD. DEVIATION	11.9	STD.DEVIATION	1.5	

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FUNCTION 4
SUM BASIC SECONDARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

757.9
19
39.9
4194.9
78.7

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

45.4
19
5.0
26.4
5.1

ASSOCIATED DELAY TOTALS

SUM CNT AVG
560. 19 29.

TOTAL TUBES

FUNCTION 7
SUM BASIC SECONDARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

35.4
1.7
54.2
7.4

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

4.7
0.7
0.4
0.6

ASSOCIATED DELAY TOTALS

SUM CNT AVG
1.7 1.7 0.

TOTAL TUBES

FUNCTION 21
SUM BASIC SECONDARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

90.9
14
4.9
77.6
8.8

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

23.2
14
1.7
3.0
1.7

ASSOCIATED DELAY TOTALS

SUM CNT AVG
1796. 14 128.

TOTAL TUBES

REACTOR 5 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.

•• 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	31	0	0	0	0	1	0	0	0	0	0	0	0	0	23	23	1	0	0	0	30
FUNCTION 2	9	15	0	0	1	1	0	0	0	0	0	0	0	0	17	17	0	0	0	0	24
FUNCTION 3	2	0	5	0	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	0	5
FUNCTION 4	4	0	0	7	0	1	0	1	0	0	0	0	0	0	7	6	0	0	0	0	5
FUNCTION 5	14	2	0	0	17	2	0	21	3	0	1	0	0	0	24	24	3	0	0	0	18
FUNCTION 6	12	1	0	0	0	10	0	9	5	0	0	0	0	0	16	15	1	5	0	0	16
FUNCTION 7	0	0	0	0	0	0	3	1	0	0	0	0	0	0	4	4	0	0	0	0	3
FUNCTION 8	10	0	0	0	0	0	0	44	10	0	0	0	2	0	34	35	1	4	0	0	0
FUNCTION 9	0	0	0	0	0	0	0	0	21	0	0	0	0	0	13	13	1	0	0	0	0
FUNCTION 10	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	1	3	0	0	0	0
FUNCTION 11	0	0	0	0	0	0	0	0	0	1	10	1	0	0	5	5	0	0	0	0	0
FUNCTION 12	3	0	0	0	0	0	1	2	0	0	1	2	0	0	4	3	0	0	0	0	1
FUNCTION 13	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0	0
FUNCTION 14	2	0	0	0	0	0	0	0	0	0	0	0	3	1	3	2	0	0	0	0	0
FUNCTION 15	21	7	1	4	11	10	3	21	10	1	1	1	0	1	0	0	0	0	0	0	0
FUNCTION 16	23	8	1	3	10	11	3	19	9	1	1	1	0	1	0	0	0	0	0	0	0

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
FUNCTION 1																				
TGT.HOURS DWN	238.1	0.	0.	0.	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	31	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DWN	7.7	0.	0.	0.	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	48.7	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	7.0	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 1																				
TGT.HOURS DWN	13.0	20.5	0.4	0.7	0.	0.	5271.													
INCIDENTS	23	23	1	1	0	0	30													
AVERAGE DWN	0.4	0.9	0.4	1.1	0.	0.	176.													
VARIANCE	0.2	0.9	0.	0.4	-0.	-0.	36881.													
STD.DEVIATION	0.5	0.9	0.	0.7	-0.	-0.	192.													
FUNCTION 2																				
TGT.HOURS DWN	37.4	54.1	0.	0.	4.0	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	9	15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DWN	4.2	3.6	0.	0.	4.0	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	7.2	6.1	-0.	-0.	0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	2.7	2.6	-0.	-0.	0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 2																				
TGT.HOURS DWN	4.4	4.8	0.	0.	0.	0.	726.													
INCIDENTS	17	17	0	0	0	0	24													
AVERAGE DWN	0.3	0.3	0.	0.	0.	0.	30.													
VARIANCE	0.0	0.1	-0.	-0.	-0.	-0.	554.													
STD.DEVIATION	0.2	0.3	-0.	-0.	-0.	-0.	24.													
FUNCTION 3																				
TGT.HOURS DWN	2.7	0.	7.3	0.	0.	0.	0.	2.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
AVERAGE DWN	1.3	0.	1.3	0.	0.	0.	0.	1.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.3	-0.	0.4	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.5	-0.	1.0	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 3																				
TGT.HOURS DWN	0.4	0.4	0.	0.	0.	0.	10.													
INCIDENTS	1	1	0	0	0	0	5													
AVERAGE DWN	0.4	0.4	0.	0.	0.	0.	2.													

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FUNCTION	#
YCT-HOURS DWN	27.9
INCIDENTS	0.0
AVERAGE DWN	0.0
VARIANCE	0.0
STD. DEVIATION	0.0

FUNCTION	4
TCT-HOURS DOWN	79
INCIDENTS	1
AVERAGE DOWN	6.8
VARIANCE	0.3
STD.DEVIATION	0.5

[illegible]

FUNCTION	5
TCT.HOURS QMN	28.6
INCIDENTS	24
AVERAGE QMN	1.2
VARIANCE	0.6
STD.DEVIATION	0.9

[illegible]

FUNCTION	6	14	17	0.5	11.7	0.0	599
TOT-HOURS OWN	14	15	15	1	5	0	19
INCIDENTS	0.9	1.1	1.1	0.5	2.3	0	31
AVERAGE	0.4	0.8	0.8	0	7.0	0	7841
VARIANCE	0.6	0.9	0.9	0	2.6	0	89
STD-DEVIATION							

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FUNCTION	TCT-HOURS	OWN	INCIDENTS	AVERAGE	DOWN	VARIANCE	STD.DEVIATION
FUNCTION 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OWN	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
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 7	1.1	1.5	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	1.1	1.5	0.0	0.0	0.0	0.0	0.0
OWN	1.1	1.5	0.0	0.0	0.0	0.0	0.0
INCIDENTS	1.1	1.5	0.0	0.0	0.0	0.0	0.0
AVERAGE	1.1	1.5	0.0	0.0	0.0	0.0	0.0
DOWN	1.1	1.5	0.0	0.0	0.0	0.0	0.0
VARIANCE	1.1	1.5	0.0	0.0	0.0	0.0	0.0
STD.DEVIATION	1.1	1.5	0.0	0.0	0.0	0.0	0.0
FUNCTION 8	43.9	0.0	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	43.9	0.0	0.0	0.0	0.0	0.0	0.0
OWN	43.9	0.0	0.0	0.0	0.0	0.0	0.0
INCIDENTS	43.9	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE	43.9	0.0	0.0	0.0	0.0	0.0	0.0
DOWN	43.9	0.0	0.0	0.0	0.0	0.0	0.0
VARIANCE	43.9	0.0	0.0	0.0	0.0	0.0	0.0
STD.DEVIATION	43.9	0.0	0.0	0.0	0.0	0.0	0.0
FUNCTION 8	32.0	43.7	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	32.0	43.7	0.0	0.0	0.0	0.0	0.0
OWN	32.0	43.7	0.0	0.0	0.0	0.0	0.0
INCIDENTS	32.0	43.7	0.0	0.0	0.0	0.0	0.0
AVERAGE	32.0	43.7	0.0	0.0	0.0	0.0	0.0
DOWN	32.0	43.7	0.0	0.0	0.0	0.0	0.0
VARIANCE	32.0	43.7	0.0	0.0	0.0	0.0	0.0
STD.DEVIATION	32.0	43.7	0.0	0.0	0.0	0.0	0.0
FUNCTION 9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OWN	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
AVERAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 9	5.4	4.1	0.0	0.0	0.0	0.0	0.0
TCT-HOURS	5.4	4.1	0.0	0.0	0.0	0.0	0.0
OWN	5.4	4.1	0.0	0.0	0.0	0.0	0.0
INCIDENTS	5.4	4.1	0.0	0.0	0.0	0.0	0.0
AVERAGE	5.4	4.1	0.0	0.0	0.0	0.0	0.0
DOWN	5.4	4.1	0.0	0.0	0.0	0.0	0.0
VARIANCE	5.4	4.1	0.0	0.0	0.0	0.0	0.0
STD.DEVIATION	5.4	4.1	0.0	0.0	0.0	0.0	0.0

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FUNCTION 10

AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 10
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 13
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN

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FUNCTION 13
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

0.2 0.2 0.2 1.1 0.0 0.0
0.2 0.2 0.2 1.1 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 14
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

20.9 0.0 0.0 0.0 0.0 0.0
10.4 0.0 0.0 0.0 0.0 0.0
10.1 0.0 0.0 0.0 0.0 0.0
3.2 0.0 0.0 0.0 0.0 0.0

FUNCTION 14
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 15
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

34.6 2.6 0.3 2.9 14.2 7.9
21 1.1 0.3 0.7 1.1 1.0
1.4 0.4 0.3 0.3 0.3 0.3
2.1 0.0 0.0 0.0 0.0 0.0
1.5 0.2 0.0 0.0 0.0 0.0

FUNCTION 15
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 16
TOT.HOURS DWN
INCIDENTS
AVERAGE DQWN
VARIANCE
STD.DEVIATION

41.0 4.3 0.3 4.4 19.1 13.4
23 0.5 0.3 0.1 0.1 0.5
1.6 0.0 0.0 0.0 0.0 0.0
2.4 0.2 0.0 0.0 0.0 0.0
1.4 0.4 0.0 0.0 0.0 0.0

INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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FUNCTION 17
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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0.7
0.4

1.5
1.2
0.7
0.4

1.5
1.2
0.7
0.4

FUNCTION 17
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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0.3
0.1
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FUNCTION 18
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

13.4
2.7
18.4
4.3

13.4
2.7
18.4
4.3

13.4
2.7
18.4
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13.4
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18.4
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13.4
2.7
18.4
4.3

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FUNCTION 18
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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FUNCTION 19
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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FUNCTION 19
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

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STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 20														
TGT.HOURS OWN	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.
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 20														
TGT.HOURS OWN	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.
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 21														
TGT.HOURS OWN	25.5	0.	0.	0.	0.	22.0	0.	14.0	0.	0.	18.0	0.	0.	0.
INCIDENTS	3.2	0.	0.	0.	0.	4.4	0.	4.4	0.	0.	3.0	0.	0.	0.
AVERAGE DOWN	3.1	-0.	-0.	-0.	-0.	4.6	-0.	11.6	-0.	-0.	1.1	-0.	-0.	-0.
VARIANCE	1.6	-0.	-0.	-0.	-0.	2.6	-0.	4.4	-0.	-0.	1.0	-0.	-0.	-0.
STD.DEVIATION	1.6	-0.	-0.	-0.	-0.	2.6	-0.	4.4	-0.	-0.	1.0	-0.	-0.	-0.
FUNCTION 21														
TGT.HOURS OWN	2.6	4.7	1.5	0.	0.	0.	755.							
INCIDENTS	0.4	0.9	0.2	0.	0.	0.	10.							
AVERAGE DOWN	0.3	0.5	0.1	0.	0.	0.	16.							
VARIANCE	0.0	0.2	0.1	-0.	-0.	-0.	4246.							
STD.DEVIATION	0.2	0.5	0.4	-0.	-0.	-0.	45.							
FUNCTION 22														
TGT.HOURS OWN	7.2	0.	0.	0.	0.	0.	0.	3.4	0.	0.	0.	2.4	0.	0.
INCIDENTS	7.1	0.	0.	0.	0.	0.	0.	2.2	0.	0.	0.	2.2	0.	0.
AVERAGE DOWN	7.2	-0.	-0.	-0.	-0.	-0.	-0.	1.8	-0.	-0.	-0.	1.3	-0.	-0.
VARIANCE	0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6	-0.	-0.	-0.	0.5	-0.	-0.
STD.DEVIATION	0.	-0.	-0.	-0.	-0.	-0.	-0.	1.3	-0.	-0.	-0.	0.7	-0.	-0.
FUNCTION 22														
TGT.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.	0.							
VARIANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.							
STD.DEVIATION	-0.	-0.	-0.	-0.	-0.	-0.	-0.							

••SUB TOTAL DELINEATION••

FUNCTION	1	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM OF DELAYS	239.1	SUM 42.6	5271.
SUM OF INCIDENTS	7.7	CNTY 31	31
NUMBER OF INCIDENTS	110.1	AVG 1.4	170.
AVERAGE HOURS REQD.	10.5	STD. DEVIATION	
VARIANCE			
STD. DEVIATION			

FUNCTION	SUMBASIS6SECCNDRY	SUN OF DELAYS	TOTAL TUNES
NUMBER OF INCIDENTS	94.4	SUM	726
AVERAGE HOURS REQD.	3.9	CNT	25
VARIANCE	23.3	AVG	29
STD. DEVIATION	4.8		

FUNCTION	3	SUM OF DELAYS	TOTAL TUBES
SUM BASES	12	0.8	10
SEC	7	0.7	7
CNDRS			
NUMBER OF INCIDENTS	1	Avg	1
AVERAGE HOURS REQD.	1.6		
VARIANCE	5.2		
STD. DEVIATION	2.3		

FUNCTION	4	SUMBASE	SECONDA	RIES	SUN OF INCIDENTS	ASSOCIATED DELAY	TOTALS	TOTAL TUBES
NUMBER OF INCIDENTS	81.0				SUN OF DELAYS	10.2	SUM	5.
AVERAGE HOURS REQD.	10.1				INCIDENTS	1.8	CNT	8
VARIANCE	308.1				AVERAGE	1.3	AVG	1.
STD. DEVIATION	17.6				STD. DEVIATION	1.4		

FUNCTION	5	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM BASIC SECONDARIES	357.1	SUM 86.2	90.
NUMBER OF INCIDENTS	25	CNT 25	25
AVERAGE HOURS REQD.	14.3	AVG 3.4	4.

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FUNCTION 4					TOTAL TUBES
SUM BASIC SECONDARIES	503.3	SUM OF DELAYS	43.7	SUM	599
NUMBER OF INCIDENTS	18	INCIDENTS	18	CNT	18
AVERAGE HOURS REQ.	28.0	AVERAGE	2.4	AVG	33
VARIANCE	3131.4	VARIANCE	7.7		
STD. DEVIATION	56.0	STD. DEVIATION	2.8		

FUNCTION 7					TOTAL TUBES
SUM BASIC SECONDARIES	22.4	SUM OF DELAYS	2.0	SUM	12
NUMBER OF INCIDENTS	9.4	INCIDENTS	4	CNT	4
AVERAGE HOURS REQ.	57.8	AVERAGE	0.6	AVG	3
VARIANCE	7.4	VARIANCE	0.2		
STD. DEVIATION		STD. DEVIATION	0.4		

FUNCTION 21					TOTAL TUBES
SUM BASIC SECONDARIES	79.5	SUM OF DELAYS	9.0	SUM	755
NUMBER OF INCIDENTS	11	INCIDENTS	11	CNT	11
AVERAGE HOURS REQ.	7.2	AVERAGE	0.8	AVG	69
VARIANCE	68.5	VARIANCE	0.5		
STD. DEVIATION	8.3	STD. DEVIATION	0.7		

DECLASSIFIED

REACTOR 4 OUTAGE FUNCTION EXPECTATION REPORT

APRIL 1961 TO MAY 15 1962

EW-57668
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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.

** 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	22	0	2	2	2	1	1	2	0	0	0	0	0	0	18	20	11	13	3	2	21
FUNCTION 2	7	10	0	0	0	0	0	0	0	0	1	0	0	0	10	11	2	3	3	0	16
FUNCTION 3	7	0	3	0	0	0	0	0	5	0	0	0	0	0	4	5	0	1	0	1	9
FUNCTION 4	15	0	0	9	1	0	0	9	0	0	0	0	0	1	13	19	1	3	0	0	20
FUNCTION 5	23	0	0	0	27	3	0	40	0	0	1	0	0	1	44	47	4	21	4	1	38
FUNCTION 6	9	0	0	0	0	10	0	12	1	0	1	2	0	0	14	14	3	5	3	1	16
FUNCTION 7	0	0	0	0	0	0	4	2	0	0	0	0	0	0	2	3	0	1	1	1	5
FUNCTION 8	6	0	0	0	0	0	0	49	21	1	0	0	0	0	31	33	2	13	3	1	0
FUNCTION 9	0	0	0	0	0	0	0	0	25	0	0	0	0	0	10	14	2	3	2	0	0
FUNCTION 10	0	0	0	0	0	0	0	0	0	8	0	0	0	0	2	4	0	0	1	0	0
FUNCTION 11	2	0	0	0	0	0	0	0	5	0	0	0	0	0	4	8	0	2	0	0	0
FUNCTION 12	3	1	0	0	0	0	0	1	0	0	1	5	0	0	4	7	2	3	1	0	1
FUNCTION 13	1	0	0	0	0	0	0	1	0	0	0	1	8	0	4	6	1	1	2	1	0
FUNCTION 14	4	0	1	0	0	0	0	2	2	0	0	1	4	16	3	3	0	1	0	0	0
FUNCTION 15	30	4	1	3	18	6	2	13	9	0	1	4	2	2	0	0	0	0	0	0	0
FUNCTION 16	28	4	1	5	16	6	3	13	10	0	3	5	2	2	0	0	0	0	0	0	0

DECLASSIFIED

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														
TOT.HOURS OWN	259.4	0.	5.3	7.6	4.2	3.3	1.0	4.2	0.	0.	0.	0.	0.	0.
INCIDENTS	22	0.	2.2	3.8	3.7	1	1.0	2.1	0.	0.	0.	0.	0.	0.
AVERAGE DOWN	11.8	0.	1.6	3.8	5.7	3.3	1.0	2.1	0.	0.	0.	0.	0.	0.
VARIANCE	131.7	-0.	3.4	21.8	8.8	0.	0.	1.0	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	11.4	-0.	2.3	4.7	3.0	0.	0.	1.0	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 1														
TOT.HOURS OWN	15.3	38.1	14.6	12.1	7.8	1.7	4145.1							
INCIDENTS	18	20	11	13	11	2	21							
AVERAGE DOWN	0.8	1.9	1.3	0.9	2.6	0.8	198.							
VARIANCE	0.2	2.2	0.7	0.7	1.7	0.4	74194.							
STD.DEVIATION	0.5	1.5	0.8	0.8	1.3	0.6	272.							
FUNCTION 2														
TOT.HOURS OWN	45.2	29.7	0.	0.	0.	0.	0.	0.	0.	0.	3.3	0.	0.	0.
INCIDENTS	4.3	10	0.	0.	0.	0.	0.	0.	0.	0.	3.3	0.	0.	0.
AVERAGE DOWN	24.3	4.3	0.	0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.
VARIANCE	4.9	2.1	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	-0.	-0.	-0.
STD.DEVIATION														
FUNCTION 2														
TOT.HOURS OWN	5.3	8.2	3.4	5.3	0.9	0.	442.							
INCIDENTS	10	11	2.7	1.8	0.3	0.	16							
AVERAGE DOWN	0.5	0.7	1.7	1.8	0.3	0.	41.							
VARIANCE	0.4	0.5	3.1	7.8	0.0	-0.	1439.							
STD.DEVIATION	0.4	0.7	2.3	2.8	0.1	-0.	20.							
FUNCTION 3														
TOT.HOURS OWN	14.3	0.	4.3	0.	0.	0.	0.	22.7	0.	0.	0.	0.	0.	0.
INCIDENTS	2.3	0.	2.1	0.	0.	0.	0.	4.3	0.	0.	0.	0.	0.	0.
AVERAGE DOWN	5.3	-0.	2.3	-0.	-0.	-0.	-0.	9.8	-0.	-0.	-0.	-0.	-0.	-0.
VARIANCE	2.4	-0.	1.5	-0.	-0.	-0.	-0.	3.1	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION														
FUNCTION 3														
TOT.HOURS OWN	2.3	4.4	0.	0.4	0.	0.5	23.							
INCIDENTS	4	5	0.	0.4	0.	1	3.							
AVERAGE DOWN	0.6	0.9	0.	0.4	0.	0.5	3.							
VARIANCE														
STD.DEVIATION														

FUNCTION 4	27.6	0.0	0.0	16.2	2.0	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	2.2
TOT.HOURS OWN	15	0.0	0.0	1.8	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1
INCIDENTS	1.9	0.0	0.0	0.7	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.2
AVERAGE OWN	4.4	-0.0	-0.0	0.6	0.0	0.0	0.0	5.6	-0.0	-0.0	-0.0	-0.0	-0.0	0.0
VARIANCE	2.1	-0.0	-0.0	0.6	0.0	0.0	0.0	2.4	-0.0	-0.0	-0.0	-0.0	-0.0	0.0
STD.DEVIATION														

FUNCTION 4	11.5	31.7	0.5	4.1	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	
TOT.HOURS OWN	13	1.9	0.5	2.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	
INCIDENTS	0.9	1.7	0.5	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AVERAGE OWN	0.4	5.9	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
VARIANCE	0.4	2.4	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
STD.DEVIATION														

FUNCTION 5	123.2	0.0	0.0	0.0	185.27	8.1	0.0	242.8	0.0	0.0	0.0	0.0	0.0	1.1
TOT.HOURS OWN	23	0.0	0.0	0.0	5.9	2.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	1.1
INCIDENTS	5.4	0.0	0.0	0.0	5.9	2.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	1.1
AVERAGE OWN	4.0	-0.0	-0.0	-0.0	2.4	1.4	0.0	5.4	-0.0	-0.0	-0.0	-0.0	-0.0	0.0
VARIANCE	2.5	-0.0	-0.0	-0.0					-0.0	-0.0	-0.0	-0.0	-0.0	0.0
STD.DEVIATION														

FUNCTION 5	79.4	125.3	4.5	29.8	1.4	0.4	0.0	73.0	0.0	0.0	0.0	0.0	0.0	
TOT.HOURS OWN	44	1.7	1.4	2.1	0.4	1.0	0.0	38.0	0.0	0.0	0.0	0.0	0.0	
INCIDENTS	1.8	2.7	1.4	1.4	0.4	0.4	0.0	2.0	0.0	0.0	0.0	0.0	0.0	
AVERAGE OWN	0.0	3.4	5.3	2.4	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	
VARIANCE	1.0	1.8	2.3	1.6	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	
STD.DEVIATION														

FUNCTION 6	63.6	0.0	0.0	0.0	0.0	40.9	0.0	471.8	0.0	0.0	0.0	0.0	0.0	0.0
TOT.HOURS OWN	9	0.0	0.0	0.0	0.0	10	0.0	12	0.0	0.0	0.0	0.0	0.0	0.0
INCIDENTS	7.1	0.0	0.0	0.0	0.0	4.1	0.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE OWN	90.9	-0.0	-0.0	-0.0	-0.0	46.4	-0.0	7120.8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	9.5	-0.0	-0.0	-0.0	-0.0	6.8	-0.0	84.4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION														

FUNCTION 6	19.2	55.7	3.4	11.0	10.2	1.4	713.0							
TOT.HOURS OWN	14	1.4	1.4	2.3	3.4	1.4	1.0							
INCIDENTS	1.4	4.0	1.3	5.8	4.7	0.0	45.0							
AVERAGE OWN	1.2	21.4	0.3	2.4	4.0	0.0	684.0							
VARIANCE	1.1	4.0	0.3	2.4	2.2	0.0	83.0							
STD.DEVIATION														

TCT-HOURS GMM	INCIDENTS	AVERAGE GMM	VARIANCE	STD-DEVIATION
23.2	5.4	0.0	0.0	0.0
11.4	1.3	0.0	0.0	0.0
9.9	1.3	0.0	0.0	0.0
9.1	1.3	0.0	0.0	0.0

TOT. HOURS DOWN	INCIDENTS	AVERAGE DOWN	VARIANCE	STD. DEVIATION
0.2	5	0.04	0.03	0.03
0.3	5	0.06	0.04	0.04
0.4	5	0.08	0.05	0.05
0.5	5	0.10	0.06	0.06
0.6	5	0.12	0.07	0.07
0.7	5	0.14	0.08	0.08
0.8	5	0.16	0.09	0.09
0.9	5	0.18	0.10	0.10
1.0	5	0.20	0.11	0.11
1.1	5	0.22	0.12	0.12
1.2	5	0.24	0.13	0.13
1.3	5	0.26	0.14	0.14
1.4	5	0.28	0.15	0.15
1.5	5	0.30	0.16	0.16
1.6	5	0.32	0.17	0.17
1.7	5	0.34	0.18	0.18
1.8	5	0.36	0.19	0.19
1.9	5	0.38	0.20	0.20
2.0	5	0.40	0.21	0.21
2.1	5	0.42	0.22	0.22
2.2	5	0.44	0.23	0.23
2.3	5	0.46	0.24	0.24
2.4	5	0.48	0.25	0.25
2.5	5	0.50	0.26	0.26
2.6	5	0.52	0.27	0.27
2.7	5	0.54	0.28	0.28
2.8	5	0.56	0.29	0.29
2.9	5	0.58	0.30	0.30
3.0	5	0.60	0.31	0.31
3.1	5	0.62	0.32	0.32
3.2	5	0.64	0.33	0.33
3.3	5	0.66	0.34	0.34
3.4	5	0.68	0.35	0.35
3.5	5	0.70	0.36	0.36
3.6	5	0.72	0.37	0.37
3.7	5	0.74	0.38	0.38
3.8	5	0.76	0.39	0.39
3.9	5	0.78	0.40	0.40
4.0	5	0.80	0.41	0.41
4.1	5	0.82	0.42	0.42
4.2	5	0.84	0.43	0.43
4.3	5	0.86	0.44	0.44
4.4	5	0.88	0.45	0.45
4.5	5	0.90	0.46	0.46
4.6	5	0.92	0.47	0.47
4.7	5	0.94	0.48	0.48
4.8	5	0.96	0.49	0.49
4.9	5	0.98	0.50	0.50
5.0	5	1.00	0.51	0.51
5.1	5	1.02	0.52	0.52
5.2	5	1.04	0.53	0.53
5.3	5	1.06	0.54	0.54
5.4	5	1.08	0.55	0.55
5.5	5	1.10	0.56	0.56
5.6	5	1.12	0.57	0.57
5.7	5	1.14	0.58	0.58
5.8	5	1.16	0.59	0.59
5.9	5	1.18	0.60	0.60
6.0	5	1.20	0.61	0.61
6.1	5	1.22	0.62	0.62
6.2	5	1.24	0.63	0.63
6.3	5	1.26	0.64	0.64
6.4	5	1.28	0.65	0.65
6.5	5	1.30	0.66	0.66
6.6	5	1.32	0.67	0.67
6.7	5	1.34	0.68	0.68
6.8	5	1.36	0.69	0.69
6.9	5	1.38	0.70	0.70
7.0	5	1.40	0.71	0.71
7.1	5	1.42	0.72	0.72
7.2	5	1.44	0.73	0.73
7.3	5	1.46	0.74	0.74
7.4	5	1.48	0.75	0.75
7.5	5	1.50	0.76	0.76
7.6	5	1.52	0.77	0.77
7.7	5	1.54	0.78	0.78

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[REDACTED]

AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 10
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 11
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 12
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

FUNCTION 13
TCT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

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FUNCTION 13
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

1-1 4-1 1-0 0-4 1-2 0-3 0-0
 4 0-7 1-0 0-4 0-6 0-3 0-0
 0-0 0-7 0-0 0-0 0-2 0-0 -0-0
 0-2 0-6 0-0 0-0 0-4 0-0 -0-0

FUNCTION 14
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

16-6 0-0 0-5 0-0 0-0 1-6 9-2 0-0 0-0 0-0 1-0 4-0 10-5
 4-2 0-0 0-5 0-0 0-0 0-0 4-6 0-0 0-0 0-2 0-0 4-0 1-0
 17-2 0-0 0-0 0-0 0-0 0-0 0-1 0-0 0-0 0-0 0-0 0-0 0-0
 4-1 0-0 0-0 0-0 0-0 0-0 0-3 0-0 0-0 0-0 0-0 0-0 0-0

FUNCTION 14
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

3-5 4-3 0-0 0-2 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0
 1-2 1-5 0-0 0-2 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0
 0-6 1-8 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0
 0-9 1-3 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0

FUNCTION 15
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

75-6 1-0 0-4 1-9 23-4 4-8 0-9 9-9 2-5 0-1 2-4 0-8 3-3
 30 4 1 3 18 1-1 2 0-2 0-9 0-1 4 2 2
 2-5 0-2 0-4 0-4 1-3 0-7 0-4 0-3 0-0 0-1 0-4 0-1 1-6
 1-5 0-2 0-4 0-4 0-8 0-8 0-2 0-2 0-0 0-0 0-0 0-0 0-0

FUNCTION 15
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0
 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0
 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0
 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0 -0-0

FUNCTION 16
 TOT-HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD.DEVIATION

121-7 1-9 1-2 17-3 46-0 21-7 3-3 12-1 5-3 0-5 3-2 2-9 3-0
 28 4 1 5 18 3-6 3 13 10 0-3 0-5 2 2-9 0-6
 4-3 0-5 1-2 3-5 2-6 4-2 1-1 0-9 0-2 0-2 0-4 1-4 1-9
 20-0 0-0 0-0 17-8 2-9 2-0 1-7 0-4 0-0 0-0 0-4 1-2 2-2
 4-5 0-2 0-0 4-2 1-7 2-0 1-3 0-6 0-4 0-1 0-6 1-2 1-5

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[illegible]

STD-DEVIATION

-0.

-0.

-0.

-0.

-0.

-0.

-0.

FUNCTION 20
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

2.4
1.2
0.0
0.1

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

FUNCTION 20
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

FUNCTION 21
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

15.6
3.2
18.0
4.2

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

FUNCTION 21
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

0.8
0.3
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

FUNCTION 22
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

0.2
0.2
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

0.0
0.0
0.0
0.0

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FUNCTION 22
TCT-HOURS DWN
INCIDENTS
AVERAGE DCHN
VARIANCE
STD-DEVIATION

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SUB TOTAL DELINEATION

FUNCTION	SUM	AVG	STD. DEVIATION	ASSOCIATED DELAY	TOTALS	TOTAL TUBES
SUM BASICS	287.2	23.9	13.3	89.6	SUM	4165
SUM SECONDARIES	287.2	23.9	13.3	23	CNT	23
NUMBER OF INCIDENTS	12.3	1.0			AVG	181
AVERAGE HOURS REQD.	323.3					
VARIANCE	18.0					
STD. DEVIATION						

FUNCTION	2	TOTALS
SUMBASISSECONDIARIES	76.2	SUM
NUMBER OF INCIDENTS	17	CNT
AVERAGE HOURS REQD.	4.4	AVG
VARIANCE	39.2	
STD. DEVIATION	6.3	

[illegible]

FUNCTION	4	SUMBASE	6	SECONDCARIES	SUM OF DELAYS	ASSOCIATED DELAY	TOTALS	TOTAL TUNES
NUMBER OF INCIDENTS	66	4			SUM	8	SUM	20
AVERAGE HOURS REQD.	12				INCIDENTS	2	CNT	22
VARIANCE	15	2			AVERAGE	3	AUG	1
STD. DEVIATION	3	9			VARIANCE	7		
					STD. DEVIATION	3		

FUNCTION	3	ASSOCIATED DELAYS	TOTALS	TOTAL TUBES
SUM OF DELAYS	243.2	SUM	73	
INCIDENTS	47	CNT	47	
AVERAGE	5.2	AVG	2	
VARIANCE	11.2			
STD DEVIATION	3.3			

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FUNCTION 4
 SUMBASIS6SECCNDRARIES
 NUMBER OF INCIDENTS
 AVERAGE HOURS REQD.
 VARIANCE
 STD. DEVIATION

792.5	101.1	713.	18	40.
18	5.6	18	18	40.
44.0	40.8	40.8	40.8	40.8
8763.5	40.8	40.8	40.8	40.8
93.4	40.8	40.8	40.8	40.8

ASSOCIATED DELAY TOTALS
 SUM OF DELAYS
 INCIDENTS
 AVERAGE
 VARIANCE
 STD. DEVIATION

FUNCTION 7
 SUMBASIS6SECCNDRARIES
 NUMBER OF INCIDENTS
 AVERAGE HOURS REQD.
 VARIANCE
 STD. DEVIATION

28.2	5.8	12.	5	2.
5	1.2	2.	2.	2.
5.6	3.6	3.6	3.6	3.6
94.6	1.9	1.9	1.9	1.9
9.7	1.9	1.9	1.9	1.9

ASSOCIATED DELAY TOTALS
 SUM OF DELAYS
 INCIDENTS
 AVERAGE
 VARIANCE
 STD. DEVIATION

FUNCTION 21
 SUMBASIS6SECCNDRARIES
 NUMBER OF INCIDENTS
 AVERAGE HOURS REQD.
 VARIANCE
 STD. DEVIATION

33.8	2.9	609.	6	102.
6	0.5	6	6	102.
5.4	0.5	0.5	0.5	0.5
74.9	0.5	0.5	0.5	0.5
8.8	0.7	0.7	0.7	0.7

ASSOCIATED DELAY TOTALS
 SUM OF DELAYS
 INCIDENTS
 AVERAGE
 VARIANCE
 STD. DEVIATION

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REACTOR 7 OUTAGE FUNCTION EXPECTATION REPORT APRIL 1961 TO MAY 15 1962

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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.

** 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	26	0	0	0	0	0	0	0	0	0	0	0	0	2	21	23	11	5	1	0	24
FUNCTION 2	9	15	0	0	0	0	0	0	0	0	0	0	0	0	20	19	0	1	0	0	24
FUNCTION 3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
FUNCTION 4	3	0	0	1	0	0	1	2	0	0	0	0	0	0	1	2	0	0	0	0	4
FUNCTION 5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION 6	1	0	1	0	0	1	0	4	0	0	0	0	0	0	4	3	0	0	0	0	4
FUNCTION 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION 8	0	0	0	0	0	0	0	24	10	3	0	0	4	0	14	16	2	3	0	0	0
FUNCTION 9	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
FUNCTION 10	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	1	0	0	0
FUNCTION 11	3	0	0	0	0	0	0	4	0	0	5	0	0	0	4	4	0	0	0	0	0
FUNCTION 12	11	15	0	3	0	1	0	13	2	0	7	14	2	0	20	22	1	1	0	0	2
FUNCTION 13	0	0	0	0	0	0	0	4	0	0	4	0	0	0	7	8	0	0	0	0	0
FUNCTION 14	1	1	0	0	0	0	0	4	1	1	0	0	5	2	4	4	0	0	0	0	0
FUNCTION 15	19	10	0	1	0	2	0	4	0	0	1	10	3	3	0	0	0	0	0	0	0
FUNCTION 16	20	10	0	2	0	2	0	4	0	0	1	11	5	3	0	0	0	0	0	0	0

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FUNCTION 18	7	0	0	0	0	0	0	2	2	0	0	1	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	14	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	14
FUNCTION 22	0	0	0	0	0	0	0	1	3	0	2	4	0	0	0	0	0	0	0	0

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SECONDARY FUNCTION NUMBER	15	16	17	18	19	20	21	7	8	9	10	11	12	13	14
FUNCTION 1															
TGT-HOURS OWN	407.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9
INCIDENTS	26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2
AVERAGE OWN	15.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4
VARIANCE	66.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.8
STD.DEVIATION	9.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.9
FUNCTION 1															
TGT-HOURS OWN	29.2	33.5	11.7	17.4	2.4	0.	110.4	0.	0.	0.	0.	0.	0.	0.	2.9
INCIDENTS	21	23	11	3	1	0.	24	0.	0.	0.	0.	0.	0.	0.	2
AVERAGE OWN	1.4	1.5	1.2	3.5	2.4	0.	4.1	0.	0.	0.	0.	0.	0.	0.	1.4
VARIANCE	0.4	0.9	0.8	15.0	0.	-0.	110.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.8
STD.DEVIATION	0.6	1.0	0.9	3.9	0.	-0.	10.6	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.9
FUNCTION 2															
TGT-HOURS OWN	45.4	92.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	9	15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE OWN	7.3	4.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	20.0	5.5	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	4.5	2.4	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 2															
TGT-HOURS OWN	11.5	9.8	0.	0.2	0.	0.	2937.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	20	19	0.	0.2	0.	0.	24	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE OWN	0.4	0.5	0.	0.2	0.	0.	123.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.1	0.1	-0.	0.	-0.	-0.	8363.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.3	0.3	-0.	0.	-0.	-0.	91.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 3															
TGT-HOURS OWN	2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE OWN	0.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VARIANCE	0.1	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
STD.DEVIATION	0.3	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FUNCTION 3															
TGT-HOURS OWN	0.	0.	0.	0.	0.	0.	14.	0.	0.	0.	0.	0.	0.	0.	0.
INCIDENTS	0.	0.	0.	0.	0.	0.	3	0.	0.	0.	0.	0.	0.	0.	0.
AVERAGE OWN	0.	0.	0.	0.	0.	0.	5.	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.

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FUNCTION 7
TOT-HOURS DOWN 0.0
INCIDENTS 0.0
AVERAGE DOWN -0.0
VARIANCE -0.0
STD.DEVIATION 0.0

FUNCTION 7
TOT-HOURS DOWN 0.0
INCIDENTS 0.0
AVERAGE DOWN 0.0
VARIANCE -0.0
STD.DEVIATION -0.0

FUNCTION 8
TOT-HOURS DOWN 0.0
INCIDENTS 0.0
AVERAGE DOWN -0.0
VARIANCE -0.0
STD.DEVIATION 0.0

FUNCTION 8
TOT-HOURS DOWN 9.9
INCIDENTS 14
AVERAGE DOWN 0.7
VARIANCE 0.4
STD.DEVIATION 0.6

FUNCTION 9
TOT-HOURS DOWN 0.0
INCIDENTS 0.0
AVERAGE DOWN -0.0
VARIANCE -0.0
STD.DEVIATION 0.0

FUNCTION 9
TOT-HOURS DOWN 0.0
INCIDENTS 0.0
AVERAGE DOWN -0.0
VARIANCE -0.0
STD.DEVIATION -0.0

FUNCTION 10

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AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 10
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 11
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 11
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 12
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 12
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 13
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN

DECLASSIFIED

FUNCTION 13
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

4.9 6.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.7 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.2 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.4 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 14
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

1.2 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.1 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 14
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

7.7 7.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
4.4 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.9 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2.2 3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.9 1.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 15
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

48.4 5.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
16 10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2.4 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.7 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 15
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FUNCTION 16
TOT.HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

54.2 4.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
20 10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2.8 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3.8 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.9 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

24.2 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
6.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

2.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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STD.DEVIATION

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FUNCTION 20
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

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FUNCTION 20
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

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FUNCTION 21
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

26.8
14
1.9
0.9
1.0

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15.2
1.9
1.0
1.0

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0.
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2.9
2.9
0.
0.

0.
0.
-0.
-0.

0.
0.
-0.
-0.

14.2
1.9
0.7
0.7

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0.
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FUNCTION 21
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

2.5
9
0.3
0.0
0.2

2.9
0.3
0.0
0.1

1.2
1.2
0.
0.

11.1
11.1
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516.
12
36.
737.
27.

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FUNCTION 22
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

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3.4
3.4
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0.7

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7.2
3.4
19.2
4.4

3.8
0.9
0.5
0.7

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FUNCTION 22
TGT.HOURS QWN
INCIDENTS
AVERAGE QWN
VARIANCE
STD.DEVIATION

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DECLASSIFIED

••SUB TOTAL DELINEATION••

FUNCTION	SUM OF DELAYS	ASSOCIATED DELAY TOTALS	TOTAL TURBS
BASIC SECONDARIES	410.5	SUM 96.2	11954.7
NUMBER OF INCIDENTS	24	CNT 26	26
AVERAGE HOURS REQD.	15.8	AVG	425.1
VARIANCE	349.2	Variance	-
STD. DEVIATION	18.7	STD. DEVIATION	-

FUNCTION 2	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASES	SUM OF DELAYS	2037.
SECONDARIES	INCIDENTS	24
NUMBER OF INCIDENTS	AVERAGE	122.
AVERAGE HOURS REQD.	VARIANCE	
VARIANCE	STD. DEVIATION	
STD. DEVIATION		

FUNCTION	3	SUM	OF DELAYS	ASSOCIATED DELAY	TOTALS	TOTAL TUBES
SUMBASES/SECONDARIES	2.0	SUM	OF DELAYS	0.	SUM	14.
NUMBER OF INCIDENTS	3	INCIDENTS		3	CNT	3
AVERAGE HOURS REQ.	0.7	AVERAGE		0.	AVG	5.
VARIANCE	0.8	VARIANCE		0.		
STD. DEVIATION	0.9	STD. DEVIATION		0.		

[illegible]

FUNCTION	5	SUM OF DELAYS	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM OF DELAYS	1.0	0.	SUM	0.
NUMBER OF INCIDENTS	1	INCIDENTS	CNT	1
AVERAGE HOURS REQ.	1.0	AVERAGE	AVG	0.

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FUNCTION	6	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASES	32.4	SUM 5.1	11.3
INCIDENTS	6.5	CNT 5	2.1
AVERAGE HOURS REQ'D.	78.4	AVG 1.0	
VARIANCE	6.7	Variance 0.8	
STD. DEVIATION		STD. DEVIATION 0.9	

FUNCTION	7	SUM OF DELAYS	ASSOCIATED DELAY TOTALS	TOTAL TURNS
SUNBASISCCNCRARIES	0.	SUM OF DELAYS	SUM	0.
NUMBER OF INCIDENTS	0.	INCIDENTS	CNT	0.
AVERAGE HOURS REQD.	0.	AVERAGE	AVG	0.
VARIANCE	-0.	VARIANCE	-0.	-0.
STD. DEVIATION	-0.	STD. DEVIATION	-0.	-0.

FUNCTION	21	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM BASIC SECONDARIES	59.0	SUM	576
NUMBER OF INCIDENTS	16	CNT	16
AVERAGE HOURS REQD.	3.7	AVG	36
VARIANCE	18.9		
STD. DEVIATION	4.3		

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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•• 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	6	0	3	4	0	0	0	0	0	3	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

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1

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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							
FUNCTION 1														
TOT-HOURS DOWN	364.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCIDENTS	17.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	121.7	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
VARIANCE	11.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION														
FUNCTION 1														
TOT-HOURS DOWN	31.4	30.0	14.1	1.9	2.4	0.0	1184.7							
INCIDENTS	20	21	12	2	1	0	21							
AVERAGE DOWN	1.4	1.4	1.3	0.9	2.4	0.0	54.4							
VARIANCE	0.8	1.0	1.3	0.0	0.0	-0.0	127974.4							
STD.DEVIATION	0.9	1.0	1.1	0.1	0.0	-0.0	358.4							
FUNCTION 2														
TOT-HOURS DOWN	69.4	69.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCIDENTS	10	12	0.0	0.0	0.0	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE DOWN	6.9	5.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VARIANCE	19.7	13.1	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD.DEVIATION	4.4	3.6				0.1								
FUNCTION 2														
TOT-HOURS DOWN	11.3	10.9	1.3	4.4	0.8	0.0	2740.2							
INCIDENTS	8	19	3	1	1	0	23							
AVERAGE DOWN	0.4	0.6	0.3	4.4	0.8	0.0	125.0							
VARIANCE	0.1	0.2	0.2	0.0	0.0	-0.0	7597.4							
STD.DEVIATION	0.3	0.4	0.4	0.0	0.0	-0.0	87.4							
FUNCTION 3														
TOT-HOURS DOWN	1.8	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
INCIDENTS	2	0	3	0	0	0	0	0	0	0	1	0	0	0
AVERAGE DOWN	0.9	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
VARIANCE	0.7	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0
STD.DEVIATION	0.8		0.0								0.0			
FUNCTION 3														
TOT-HOURS DOWN	0.0	0.0	0.0	0.0	0.0	0.0	7.2							
INCIDENTS	0.0	0.0	0.0	0.0	0.0	0.0	4.4							
AVERAGE DOWN	0.0	0.0	0.0	0.0	0.0	0.0								

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[illegible]

INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

SECRET

The diagram illustrates the four stages of a four-bar linkage mechanism. In each stage, a horizontal bar is pivoted at its left end, and a vertical bar is pivoted at its right end. The vertical bar is shown in four different positions, representing the sequence of motion. The horizontal bar is shown in its initial position in each stage, with the vertical bar's position changing from left to right across the stages.

FUNCTION 6
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD-DEVIATION

0
0
0
-
0

0
0
0
-
0

0
0
0
-
0

27.9	9.3	0.0
5.6	0.0	0.0
4.8	0.0	0.0
2.3	0.0	0.0

The image shows three rows of musical notation for the song 'The Old Folks at Home'. Each row consists of a single staff with a treble clef and a key signature of one flat (B-flat). The first row contains a single melodic line. The second row contains a single melodic line. The third row contains a single melodic line. The notation is simple, using quarter and eighth notes, and rests.

FUNCTION 6
TOT.HOURS OWN
INCIDENTS
AVERAGE QOWN
VARIANCE
STD.DEVIATION

[illegible]

0.	0.	1.4	0.	73.
0.	0.	1.4	0.	9.
-0.	-0.	0.	-0.	492.
-0.	-0.	0.	-0.	23.

DECLASSIFIED

STD-DEVIATION

MODIFIED DIVISION

STD. DEVIATION

STD. DEVIATION

STC-DEVIATION

STD-DEVIATION

•

100

DECLASSIFIED

AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 10
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 11
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 11
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 12
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 12
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 13
TGT. HOURS DOWN
INCIDENTS
AVERAGE DOWN

0.0
-0.0
-0.0

0.0
0.0
0.0
-0.0
-0.0

2.4
0.8
0.1
0.1

3.3
0.4
0.5
0.0
0.3

24.3
4.1
22.1
4.1

7.4
12
0.4
0.1
0.6

4.3
2.1

0.0
-0.0
-0.0

1.0
1.0
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FUNCTION 13
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

0.4	0.3	0.	0.	0.	0.	0.
0.2	0.2	0.	0.	0.	0.	0.
0.3	0.1	0.	0.	0.	0.	0.
0.0	0.0	-0.	-0.	-0.	-0.	-0.
0.0	0.1	-0.	-0.	-0.	-0.	-0.

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FUNCTION 14
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

3.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	15.0	22.3	47.1
1	0	0	0	0	0	0	0	0	0	0	1	8	8
3.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	15.0	2.8	5.9
0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	6.2	84.2
0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	2.8	9.2

FUNCTION 14
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

11.2	10.3	0.1	0.	0.	0.	0.
4	4	1	0	0	0	0
1.9	1.7	0.1	0.	0.	0.	0.
2.2	3.0	0.	-0.	-0.	-0.	-0.
1.5	1.7	0.	-0.	-0.	-0.	-0.

FUNCTION 15
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

62.4	3.9	0.	3.7	0.	3.9	0.	3.0	1.2	0.	2.2	1.7	0.	7.0
21	7	0	1	0	4	0	4	1	0	4	3	0	2
3.0	0.4	0.	3.7	0.	1.0	0.	0.7	1.2	0.	0.5	0.6	0.	3.5
2.1	0.0	-0.	0.	-0.	0.3	-0.	0.1	0.	-0.	0.1	0.1	-0.	0.5
1.5	0.2	-0.	0.	-0.	0.5	-0.	0.2	0.	-0.	0.2	0.4	-0.	0.7

FUNCTION 15
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

0.	0.	0.	0.	0.	0.	0.
0	0	0	0	0	0	0
0.	0.	0.	0.	0.	0.	0.
-0.	-0.	-0.	-0.	-0.	-0.	-0.
-0.	-0.	-0.	-0.	-0.	-0.	-0.

FUNCTION 16
TCT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

54.9	4.3	0.	2.8	0.	3.8	0.	2.8	0.8	0.	2.2	1.4	0.	7.0
21	7	0	1	0	4	0	4	1	0	4	3	0	2
2.6	0.4	0.	2.8	0.	0.9	0.	0.7	0.8	0.	0.5	0.5	0.	3.6
2.1	0.2	-0.	0.	-0.	0.2	-0.	0.2	0.	-0.	0.2	0.1	-0.	1.6
1.4	0.4	-0.	0.	-0.	0.5	-0.	0.5	0.	-0.	0.4	0.3	-0.	1.3

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[illegible]

FUNCTION	17						
TOT. HOURS OWN	11.1	0.5	0.0	0.0	0.0	0.0	0.0
INCIDENTS	1.7	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE OWN	1.6	0.0	0.0	0.0	0.0	0.0	0.0
VARIANCE	1.3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
STD. DEVIATION	1.1	0.0	0.0	0.0	0.0	0.0	0.0

[illegible][illegible]

FUNCTION	IS
TOT.HOURS DOWN	0.
INCIDENTS	0.
AVERAGE DOWN	-0.
VARIANCE	-0.
STD.DEVIATION	-0.

[illegible][illegible]

DECLASSIFIED

STD.DEVIATION

-0.

-0.

-0.

-0.

-0.

-0.

-0.

FUNCTION 20

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

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FUNCTION 20

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

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FUNCTION 21

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

12.3

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FUNCTION 21

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

3.9

4.4

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FUNCTION 22

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

1.1

1.1

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FUNCTION 22

TOT-HOURS DOWN

INCIDENTS

AVERAGE DOWN

VARIANCE

STD.DEVIATION

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DECLASSIFIED

SUB TOTAL DELINEATION

FUNCTION 1	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS688CONCARNARIES	SUM OF DELAYS 82.4	SUM 118.7
NUMBER OF INCIDENTS	INCIDENTS 21	CNT 21
AVERAGE HOURS REQD.	AVERAGE 3.0	AVG 5.6
VARIANCE	VARIANCE 7.7	
STD. DEVIATION	STD. DEVIATION 2.0	

FUNCTION 2	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS688CONCARNARIES	SUM OF DELAYS 28.9	SUM 2740
NUMBER OF INCIDENTS	INCIDENTS 22	CNT 22
AVERAGE HOURS REQD.	AVERAGE 1.3	AVG 125
VARIANCE	VARIANCE 2.0	
STD. DEVIATION	STD. DEVIATION 1.4	

FUNCTION 3	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS688CONCARNARIES	SUM OF DELAYS 0.3	SUM 7
NUMBER OF INCIDENTS	INCIDENTS 0	CNT 3
AVERAGE HOURS REQD.	AVERAGE 0	AVG 2
VARIANCE	VARIANCE 0	
STD. DEVIATION	STD. DEVIATION 0	

FUNCTION 4	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS688CONCARNARIES	SUM OF DELAYS 17.7	SUM 1
NUMBER OF INCIDENTS	INCIDENTS 4	CNT 4
AVERAGE HOURS REQD.	AVERAGE 4.4	AVG 0
VARIANCE	VARIANCE 24.0	
STD. DEVIATION	STD. DEVIATION 4.9	

FUNCTION 5	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS688CONCARNARIES	SUM OF DELAYS 9.2	SUM 0
NUMBER OF INCIDENTS	INCIDENTS 2	CNT 2
AVERAGE HOURS REQD.	AVERAGE 4.6	AVG 0

DECLASSIFIED

FUNCTION 6
SUM#BASIS6SEC#CNC#ARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

44.8
9
7.2
107.5
10.4

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

8.2
9
0.9
1.2
1.1

ASSOCIATED DELAY TOTALS

SUM CNT AVG
73. 9 8.

TOTAL TUBES

FUNCTION 7
SUM#BASIS6SEC#CNC#ARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

1.8
1
1.8
0.
0.

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

0.
1
0.
0.
0.

ASSOCIATED DELAY TOTALS

SUM CNT AVG
1. 1 1.

TOTAL TUBES

FUNCTION 21
SUM#BASIS6SEC#CNC#ARIES
NUMBER OF INCIDENTS
AVERAGE HOURS REQD.
VARIANCE
STD. DEVIATION

39.4
7
5.6
44.4
4.8

SUM OF DELAYS
INCIDENTS
AVERAGE
VARIANCE
STD. DEVIATION

7.9
7
1.1
1.4
1.2

ASSOCIATED DELAY TOTALS

SUM CNT AVG
385. 7 55.

TOTAL TUBES

APRIL 1961 TO MAY 15 1962

DEPARTMENT OUTAGE FUNCTION EXPECTATION REPORT

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.

** 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	212	0	2	4	16	12	2	2	0	0	1	0	1	5	162	173	69	77	5	2	214
FUNCTION 2	74	125	0	1	1	7	0	0	0	0	1	0	0	0	135	138	18	34	4	0	197
FUNCTION 3	30	0	23	0	0	2	0	14	0	0	1	0	1	0	19	22	4	7	0	1	50
FUNCTION 4	56	3	0	51	1	9	3	38	2	0	0	0	0	2	64	70	9	24	0	0	69
FUNCTION 5	101	4	1	0	98	30	3	126	12	0	2	0	0	1	164	170	32	87	4	1	133
FUNCTION 6	45	9	2	0	1	75	0	63	24	0	2	5	0	1	93	93	15	38	5	2	105
FUNCTION 7	0	0	0	0	0	0	22	11	1	0	0	0	0	1	21	21	0	4	1	1	17
FUNCTION 8	40	0	0	0	2	0	0	302	100	19	0	2	16	0	213	229	22	65	5	1	1
FUNCTION 9	0	0	0	0	0	0	0	1	124	0	0	0	0	0	38	45	3	4	3	0	4
FUNCTION 10	1	0	0	0	0	0	0	1	1	28	1	1	0	0	5	9	7	1	1	0	0
FUNCTION 11	25	0	0	0	0	0	0	13	0	1	68	2	0	0	33	40	2	8	0	0	0
FUNCTION 12	44	29	0	4	1	4	1	34	4	0	27	58	3	0	78	82	7	14	3	0	17
FUNCTION 13	6	0	0	0	0	0	0	7	0	0	7	14	26	0	31	35	1	5	2	1	0
FUNCTION 14	26	2	1	0	1	0	0	10	4	1	1	6	38	59	37	40	5	10	0	0	2
FUNCTION 15	193	56	7	29	61	58	17	87	29	2	17	28	11	11	0	0	0	0	0	0	0
FUNCTION 16	201	57	6	31	61	59	17	93	31	3	20	34	13	12	0	0	0	0	0	0	0

DECLASSIFIED

101 13 4 8 32 21 3 59 10 3 4 15 2 1 0 0 0 0 0 0

FUNCTION 18	101	13	4	8	32	21	3	59	10	3	4	15	2	1	0	0	0	0	0
FUNCTION 19	3	2	0	0	4	3	1	3	1	0	0	1	1	0	0	0	0	0	0
FUNCTION 20	2	0	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0
FUNCTION 21	58	1	0	0	1	40	0	7	4	0	48	0	0	0	59	56	14	12	0
FUNCTION 22	4	0	0	0	0	0	0	7	9	3	3	36	0	0	0	0	0	0	0

DECLASSIFIED

SECONDARY FUNCTION NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FUNCTION 1	15	16	17	18	19	20	21							
TOT.HOURS OWN	2343.2	0.0	5.3	8.6	18.1	23.2	1.1	4.2	0.0	0.0	0.9	0.0	0.3	4.1
INCIDENTS	212	0.0	2.4	2.1	1.1	1.2	0.5	2.1	0.0	0.0	0.9	0.0	0.3	0.5
AVERAGE OWN	11.1	0.0	5.4	10.6	1.4	1.5	0.4	1.0	0.0	0.0	0.0	0.0	0.0	0.8
VARIANCE	87.5	-0.0	2.3	3.3	1.2	1.2	0.4	1.0	-0.0	-0.0	0.0	-0.0	0.0	0.4
STD.DEVIATION	9.4	-0.0	2.3	3.3	1.2	1.2	0.4	1.0	-0.0	-0.0	0.0	-0.0	0.0	0.7
FUNCTION 1	153.2	219.5	66.3	61.4	13.0	1.7	52149.0							
TOT.HOURS OWN	162	173	49	77	2	2	214							
INCIDENTS	0.0	1.3	1.3	1.1	2.4	0.8	244							
AVERAGE OWN	0.0	1.0	1.2	1.7	0.4	0.4	28374.0							
VARIANCE	0.0	1.0	1.1	1.3	0.9	0.4	280.0							
STD.DEVIATION	0.0	1.0	1.1	1.3	0.9	0.4	280.0							
FUNCTION 2	471.0	548.4	0.0	11.6	4.0	19.2	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
TOT.HOURS OWN	74	125	0.0	1	1	7	0	0	0	0	1	0	0	0
INCIDENTS	6.4	4.4	0.0	11.4	4.0	2.7	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
AVERAGE OWN	22.1	11.0	-0.0	0.0	0.0	4.4	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0
VARIANCE	4.7	3.5	-0.0	0.0	0.0	2.5	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0
STD.DEVIATION	4.7	3.5	-0.0	0.0	0.0	2.5	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0
FUNCTION 2	68.4	69.4	19.8	27.3	1.4	0.0	12561.0							
TOT.HOURS OWN	131	131	81	81	4.4	0.0	461							
INCIDENTS	0.0	0.0	1.1	0.0	0.0	0.0	44							
AVERAGE OWN	0.0	0.0	1.1	0.0	0.0	-0.0	4804.0							
VARIANCE	0.0	0.0	1.1	0.0	0.0	-0.0	49.0							
STD.DEVIATION	0.0	0.0	1.1	0.0	0.0	-0.0	49.0							
FUNCTION 3	52.8	0.0	52.8	0.0	0.0	3.8	0.0	36.3	0.0	0.0	0.7	0.0	0.2	0.0
TOT.HOURS OWN	30	0.0	23	0.0	0.0	1.0	0.0	14	0.0	0.0	1	0.0	1	0.0
INCIDENTS	1.8	0.0	2.3	0.0	0.0	0.3	0.0	2.7	0.0	0.0	0.7	0.0	0.7	0.0
AVERAGE OWN	4.0	-0.0	4.9	-0.0	-0.0	0.0	-0.0	5.7	-0.0	-0.0	0.0	-0.0	0.0	-0.0
VARIANCE	2.0	-0.0	2.2	-0.0	-0.0	0.0	-0.0	2.4	-0.0	-0.0	0.0	-0.0	0.0	-0.0
STD.DEVIATION	2.0	-0.0	2.2	-0.0	-0.0	0.0	-0.0	2.4	-0.0	-0.0	0.0	-0.0	0.0	-0.0
FUNCTION 3	7.6	12.3	3.4	2.4	0.0	0.5	344.0							
TOT.HOURS OWN	19	22	4	7	0.0	1	50							
INCIDENTS	0.4	0.4	0.8	0.4	0.0	0.5	7.0							
AVERAGE OWN	0.4	0.4	0.8	0.4	0.0	0.5	7.0							

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FUNCTION	4	114.4	226.8	2.0	32.0	25.1	204.9	0.9	0.0	0.0	0.0	240.0
TCT-HOURS DOWN	54	51	1	1	9	3	38	0.4	0	0	0	240.0
INCIDENTS	2.0	4.4	2.0	2.0	3.1	5.4	5.4	0.4	0.0	0.0	0.0	120.0
AVERAGE DOWN	7.4	29.0	0.0	0.0	1.7	38.0	43.3	0.1	0.0	0.0	0.0	2753.7
VARIANCE	0.2	5.4	0.0	0.0	1.3	4.3	0.0	0.4	0.0	0.0	0.0	160.0
STD-DEVIATION	0.4	2.3	0.0	0.0	1.1	2.1	0.0	0.6	0.0	0.0	0.0	12.6

FUNCTION	4	5	6	7	8	9	0
TOT. HOURS DOWN	85.0	107.5	6.0	37.8	0.0	0.0	71.0
INCIDENTS	44	70	9	24	0	0	69
AVERAGE DOWN	1.9	1.5	0.9	1.9	0	0	1.5
VARIANCE	1.3	2.0	1.0	3.0	-0.0	-0.0	0.0
STD. DEVIATION	1.1	1.0	1.0	1.7	-0.0	-0.0	0.0

FUNCTION	S
TCT.HOURS DOWN	587.9
INCIDENTS	101
AVERAGE DOWN	5.6
VARIANCE	21.0
STD.DEVIATION	4.6

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FUNCTION	6					
TGT-HOURS OWN	126.7	202.2	28.2	91.5	24.2	3959.3
INCIDENTS	93	93	15	38	5	109
AVERAGE DOWN	1.4	2.2	1.9	2.4	4.8	38
VARIANCE	1.5	4.2	2.2	7.4	21.9	6282.0
STD-DEVIATION	1.2	2.5	3.3	2.7	4.7	79.1

FUNCTION 7
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

0.	0.	0.	0.	0.	0.	44.5	87.0	0.4	0.	0.	0.	0.	4.0
0.0	0.0	0.0	0.0	0.0	0.0	2.2	11	0.1	0.0	0.0	0.0	0.0	4.0
-0.	-0.	-0.	-0.	-0.	-0.	3.0	7.9	0.4	-0.	-0.	-0.	-0.	0.0
-0.	-0.	-0.	-0.	-0.	-0.	2.4	5.6	0.	-0.	-0.	-0.	-0.	0.

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FUNCTION 7
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

7.1	11.8	0.	2.1	0.2	1.1	4.5	1.7	0.	0.	0.	0.	0.	0.
2.1	2.1	0.0	0.0	0.0	0.0	1.1	1.1	0.	0.	0.	0.	0.	0.
0.3	0.4	-0.	0.0	0.0	0.0	0.0	0.0	0.	0.	0.	0.	0.	0.
0.1	0.4	-0.	0.0	0.0	0.0	0.0	0.0	0.	0.	0.	0.	0.	0.
0.2	0.4	-0.	0.0	0.0	0.0	0.0	0.0	0.	0.	0.	0.	0.	0.

FUNCTION 8
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

171.5	0.	0.	0.	10.5	0.	0.	2286.4	294.0	52.1	0.	7.6	19.5	0.
40	0.0	0.0	0.0	0.0	0.0	0.0	302	100	2.1	0.0	2.2	1.4	0.0
4.3	-0.	-0.	-0.	0.5	-0.	-0.	7.6	2.0	2.4	-0.	3.8	1.2	-0.
31.0	-0.	-0.	-0.	0.0	-0.	-0.	53.1	10.1	8.5	-0.	14.4	0.0	-0.
5.1	-0.	-0.	-0.	0.0	-0.	-0.	7.3	3.2	2.0	-0.	3.8	1.0	-0.

FUNCTION 8
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

192.0	241.9	24.3	59.2	20.8	0.5	10.	0.	0.	0.	0.	0.	0.	0.
213	220	1.2	0.6	0.6	0.5	10.	0.	0.	0.	0.	0.	0.	0.
0.9	1.1	1.1	0.6	0.6	0.5	0.	0.	0.	0.	0.	0.	0.	0.
0.6	1.3	1.1	0.4	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.1	1.2	1.1	0.4	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.

FUNCTION 9
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

0.	0.	0.	0.	0.	0.	0.	0.0	341.0	0.	0.	0.	0.	0.
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124	0.0	0.0	0.0	0.0	0.0
-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.0	1.7	-0.	-0.	-0.	-0.	-0.
-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.	4.2	-0.	-0.	-0.	-0.	-0.

FUNCTION 9
TGT.HOURS OWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

17.1	25.1	1.1	1.1	1.1	0.	189.	0.	0.	0.	0.	0.	0.	0.
38	4.5	0.4	0.4	0.4	0.	47.	0.	0.	0.	0.	0.	0.	0.
0.4	0.4	0.4	0.4	0.4	-0.	4044.	0.	0.	0.	0.	0.	0.	0.
0.1	0.4	0.4	0.4	0.4	-0.	78.	0.	0.	0.	0.	0.	0.	0.
0.4	0.4	0.4	0.4	0.4	-0.	0.	0.	0.	0.	0.	0.	0.	0.

DECLASSIFIED

FUNCTION 10

DECLASSIFIED

AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 10
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 11
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 11
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 12
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 12
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

FUNCTION 13
TGT-HOURS DOWN
INCIDENTS
AVERAGE DOWN

31.0
0.0
0.0

2.7
0.3
0.3
0.3
0.3

34.0
2.3
1.4
4.8
2.2

11.0
3.3
0.3
0.1
0.3

191.3
4.2
32.3
5.7

67.4
78
0.9
1.0
1.0

9.1
4
1.5

0.0
-0.0
-0.0

18.4
2.1
19.0
4.4

0.0
0.0
-0.0
-0.0

17.3
4.0
0.4
0.2
0.4

87.8
2.0
8.7
2.9

73.4
62
0.9
1.1
1.0

0.0
0.0
0.0

0.0
-0.0
-0.0

0.3
0.3
0.3
0.3

0.0
0.0
-0.0
-0.0

3.2
0.4
0.3
0.5

12.4
3.1
8.4
3.0

27.4
1.7
1.7
14.9
4.1

0.0
0.0
0.0

0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

16.2
4.0
15.3
3.9

8.4
2.9
19.0
4.4

0.0
0.0
0.0

0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

12.4
12.4
0.0
0.0

173.1
17
104
299.2
17.2

0.0
0.0
0.0

0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

105.1
3.9
15.9
4.0

40.6
5.8
5.8

0.0
0.0
0.0

0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

260.9
4.8
33.9
5.8

83.8
14
6.0

0.0
0.0
0.0

0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

0.0
0.0
-0.0
-0.0

7.4
2.3
13.4
-0.0

105.6
24
4.1

0.0
0.0
0.0

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DECLASSIFIED

INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 17
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 17
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 18
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 18
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 19
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

FUNCTION 19
 TGT. HOURS DOWN
 INCIDENTS
 AVERAGE DOWN
 VARIANCE
 STD. DEVIATION

57.1
 42
 1.4
 1.3
 1.2

0.2
 1
 0.2
 0.2
 0.2

175.8
 101
 1.7
 5.0
 2.2

0.0
 0.0
 0.0
 0.0
 0.0

4.4
 1.5
 0.4
 0.4
 0.4

0.0
 0.0
 0.0
 0.0
 0.0

30.8
 24
 1.3
 0.9
 1.0

0.0
 0.0
 0.0
 0.0
 0.0

1.4
 0.1
 1.1
 0.1
 0.1

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

15.4
 14
 1.0
 1.5
 1.2

0.0
 0.0
 0.0
 0.0
 0.0

6.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

14.4
 12
 1.2
 1.7
 1.3

0.0
 0.0
 0.0
 0.0
 0.0

5.1
 0.0
 1.1
 1.1
 1.1

0.0
 0.0
 0.0
 0.0
 0.0

2.5
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

4.1
 3
 1.2
 1.3
 1.2

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

0.0
 0.0
 0.0
 0.0
 0.0

7.4
 10
 0.8
 1.5
 1.2

0.2
 1
 0.2
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DECLASSIFIED

[illegible]

FUNCTION 20

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

FUNCTION 20

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

Figure 6

(a) $\beta = 0.75$, $\gamma = 0.9$

(b) $\beta = 0.85$, $\gamma = 0.9$

(c) $\beta = 0.95$, $\gamma = 0.9$

(d) $\beta = 0.75$, $\gamma = 0.95$

(e) $\beta = 0.85$, $\gamma = 0.95$

(f) $\beta = 0.95$, $\gamma = 0.95$

FUNCTION 21

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

FUNCTION 21

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

FUNCTION 22

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

FUNCTION 22

TOT. HOURS DOWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD. DEVIATION

[illegible]

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SUB TOTAL DELINEATION

FUNCTION	1	SUM OF DELAYS	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMMARY SECONDARIES	2429.0	SUM OF DELAYS	557.1	5219.9
NUMBER OF INCIDENTS	23	INCIDENTS	225	323
AVERAGE HOURS REQ.	10.9	AVERAGE	2.5	234.
VARIANCE	209.6	VARIANCE	6.8	-
STD. DEVIATION	14.5	STD. DEVIATION	2.6	-

FUNCTION	2	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUNBASIS/SECONDARIES	1057.5	SUM OF DELAYS	1253.1
SUNBASIS/INCIDENTS	202	INCIDENTS	202
NUMBER OF INCIDENTS	3.2	AVERAGE	3.2
AVERAGE HOURS REQD.	44.6	VARIANCE	1.9
VARIANCE	6.7	STD. DEVIATION	1.4
STD. DEVIATION			

FUNCTION	3	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUMBASIS	144.4	SUM OF DELAYS	26.6
SUMBASIS	50	INCIDENTS	50
NUMBER OF INCIDENTS	2.5	AVERAGE	0.5
AVERAGE HOURS REQ.	14.7	VARIANCE	0.7
VARIANCE	3.6	STD. DEVIATION	0.9
STD. DEVIATION			

FUNCTION	4	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM BASIC & SECONDARIES	848.7	SUM 238.1	71.
NUMBER OF INCIDENTS	94	CNT 94	94
AVERAGE HOURS REQD.	9.0	AVG	1.
VARIANCE	709.6		
STD. DEVIATION	26.6		

FUNCTION	5	6	SEC	INCIDENTS	RECD.	ASSOCIATED DELAY TOTALS	TOTAL TUBES
SUM OF DELAYS	243.6					SUM 789.6	337
NUMBER OF INCIDENTS	179					CNT 179	179
AVERAGE HOURS RECD.	13.5					AVG 4.4	2.4

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FUNCTION 4
SUM#BASIS6SECONCARIES 3658.5
NUMBER OF INCIDENTS 113
AVERAGE HOURS REQD. 34.1
VARIANCE 4950.7
STD. DEVIATION 70.4

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 479.4
INCIDENTS 113
AVERAGE 4.2
VARIANCE 31.5
STD. DEVIATION 5.4

TOTAL TUBES
SUM 3959.3
CNT 113
AVG 35.

FUNCTION 7
SUM#BASIS6SECONCARIES 197.7
NUMBER OF INCIDENTS 31
AVERAGE HOURS REQD. 5.1
VARIANCE 49.4
STD. DEVIATION 7.0

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 22.3
INCIDENTS 31
AVERAGE 0.7
VARIANCE 1.0
STD. DEVIATION 1.0

TOTAL TUBES
SUM 45.1
CNT 31
AVG 1.5

FUNCTION 21
SUM#BASIS6SECONCARIES 433.6
NUMBER OF INCIDENTS 89
AVERAGE HOURS REQD. 7.1
VARIANCE 100.1
STD. DEVIATION 10.0

ASSOCIATED DELAY TOTALS
SUM OF DELAYS 113.6
INCIDENTS 89
AVERAGE 1.3
VARIANCE 4.7
STD. DEVIATION 2.2

TOTAL TUBES
SUM 7695.3
CNT 89
AVG 84.

REACTOR 1 OUTAGE FUNCTION EXPECTATION REPORT

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

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

•• 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 TOTAL	43	19	3	6	18	21	3	46	32	4	14	9	14	10	47	47	27	43	1	0	43

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21										
FUNCTION TOTAL																	
TOT.HOURS DWN	646.9	59.1	4.5	15.3	147.6	189.1	17.7	1328.3	132.0	11.1	47.2	55.1	60.0	18.7			
INCIDENTS	43	19	3	6	18	21	3	46	32	4	14	9	14	10			
AVERAGE DOWN	15.0	3.1	1.5	2.5	8.2	9.0	5.9	28.9	4.1	2.8	3.4	6.1	4.3	1.9			
VARIANCE	284.1	6.1	1.9	4.9	37.1	67.0	21.6	2477.3	20.0	3.9	9.0	96.9	8.0	4.6			
STD.DEVIATION	16.9	2.5	1.4	2.2	6.1	8.2	4.7	49.8	4.5	2.0	3.0	9.8	2.8	2.1			
FUNCTION TOTAL																	
TOT.HOURS DWN	187.4	224.8	49.1	117.9	12.6	0.	8285.										
INCIDENTS	47	47	27	43	1	0	43										
AVERAGE DOWN	4.0	4.8	1.8	2.7	12.6	0.	193.										
VARIANCE	2.1	6.0	2.8	8.7	0.	-0.	101189.										
STD.DEVIATION	1.5	2.5	1.7	2.9	0.	-0.	318.										

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REACTOR 2 OUTAGE FUNCTION EXPECTATION REPORT

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VARIANCES FOR THE BASIC TASKS REQUIRED
TO RE-ESTABLISH ON-LINE PRODUCTION STATUS.

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

** 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 TOTAL	30	13	1	9	4	9	0	41	18	6	16	9	15	8	35	35	11	12	2	0	31

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

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FUNCTION TOTAL														
TOT.HOURS DWN	671.9	131.7	0.5	36.8	43.1	46.4	0.	922.5	55.9	16.2	67.1	110.9	20.0	15.2
INCIDENTS	30	13	1	9	4	9	0	41	18	6	16	9	15	8
AVERAGE DOWN	22.4	10.1	0.5	4.1	10.8	5.2	0.	22.5	3.1	2.7	4.2	12.3	1.3	1.9
VARIANCE	487.9	41.5	0.	17.1	45.8	7.5	-0.	1141.9	9.7	12.1	16.9	110.2	2.5	15.4
STD.DEVIATION	22.1	6.4	0.	4.1	6.8	2.7	-0.	33.8	3.1	3.5	4.1	10.5	1.6	3.9

FUNCTION TOTAL							
TOT. HOURS DWN	134.7	217.8	26.4	34.1	24.9	0.	958.7
INCIDENTS	35	35	11	12	2	0	31
AVERAGE DWN	3.8	6.2	2.4	2.8	12.4	0.	309.
VARIANCE	0.9	19.2	6.1	5.6	41.4	-0.	142267.
STD. DEVIATION	1.0	4.4	2.5	2.4	6.4	-0.	377.

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REACTOR 3 OUTAGE FUNCTION EXPECTATION REPORT

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**ALL DATA IN HOURS-EXCEPT SECONDARY FUNCTION=21=TUBE COUNT.

** 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 TOTAL	46	23	3	7	17	24	9	47	40	11	17	14	9	7	46	50	20	28	0	1	46

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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								
FUNCTION TOTAL	682.6	53.9	3.0	46.0	265.4	422.3	26.6	703.6	177.2	16.7	46.7	31.0	5.3	15.9	
TOT.HOURS DWN	46	23	3	7	17	24	9	47	40	11	17	14	9	7	
INCIDENTS	14.8	2.3	1.0	6.6	15.6	17.6	3.0	15.0	4.4	1.5	2.7	2.2	0.6	2.3	
AVERAGE DWN	293.3	2.9	0.4	108.2	76.0	188.7	4.0	1126.8	49.9	2.0	3.6	3.6	0.6	11.2	
VARIANCE	17.1	1.7	0.6	10.4	8.7	13.7	2.0	33.6	7.1	1.4	1.9	1.9	0.8	3.3	
STD.DEVIATION															
FUNCTION TOTAL	134.9	199.9	48.2	59.2	0.	5.2	7474.								
TOT.HOURS DWN	46	50	20	28	0	1	46								
INCIDENTS	2.9	4.0	2.4	2.1	0.	5.2	162.								
AVERAGE DWN	0.9	3.2	8.7	7.5	-0.	0.	4636.								
VARIANCE	1.0	1.8	2.9	2.7	-0.	0.	211.								
STD.DEVIATION															

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REACTOR 4 OUTAGE FUNCTION EXPECTATION REPORT

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TO RE-ESTABLISH ON-LINE PRODUCTION STATUS.

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

•• 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 TOTAL	40	21	9	12	15	22	7	43	31	3	16	14	8	12	40	41	29	41	0	0	41

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21										
FUNCTION TOTAL																	
TOT.HOURS DWN	541.2	96.5	30.5	51.6	103.2	190.7	29.8	994.7	75.6	11.1	82.0	73.3	10.3	275.9			
INCIDENTS	40	21	9	12	15	22	7	43	31	3	16	14	8	12			
AVERAGE DOWN	13.5	4.6	3.4	4.3	6.9	8.7	4.3	23.1	2.4	3.7	5.1	5.2	1.3	23.0			
VARIANCE	392.2	9.6	9.4	21.5	21.2	101.1	6.7	2233.9	6.2	11.6	31.2	20.2	2.5	4635.9			
STD.DEVIATION	19.8	3.1	3.1	4.6	4.6	10.1	2.6	47.3	2.5	3.4	5.6	4.5	1.6	68.1			
FUNCTION TOTAL																	
TOT.HOURS DWN	196.2	207.3	53.3	90.2	0.	0.	8672.										
INCIDENTS	40	41	29	41	0	0	41										
AVERAGE DOWN	4.9	5.1	1.8	2.2	0.	0.	212.										
VARIANCE	19.4	12.7	3.6	10.2	-0.	-0.	145685.										
STD.DEVIATION	4.4	3.6	1.9	3.2	-0.	-0.	382.										

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REACTOR 5 OUTAGE FUNCTION EXPECTATION REPORT

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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.

** 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 TOTAL	34	18	5	7	17	16	4	44	33	5	16	4	6	1	39	38	11	17	0	0	36

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[REDACTED]

SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21										
FUNCTION TOTAL																	
TOT.HOURS DWN	505.1	63.0	7.3	47.6	148.4	179.0	23.5	945.3	151.8	8.7	46.5	14.4	14.8	3.2			
INCIDENTS	34	18	5	7	17	16	4	44	33	5	16	4	6	1			
AVERAGE DOWN	14.9	3.5	1.5	6.8	8.7	11.2	5.9	21.5	4.6	1.7	2.9	3.6	2.5	3.2			
VARIANCE	391.0	7.1	0.9	35.8	31.1	197.8	19.0	1130.2	24.6	0.7	3.5	24.4	5.9	0.			
STD.DEVIATION	19.8	2.7	1.0	6.0	5.6	14.1	4.4	33.6	5.0	0.9	1.9	4.9	2.4	0.			
FUNCTION TOTAL																	
TOT.HOURS DWN	108.5	148.9	14.6	38.1	0.	0.	7083.										
INCIDENTS	39	38	11	17	0	0	36										
AVERAGE DOWN	2.8	3.9	1.3	2.2	0.	0.	197.										
VARIANCE	1.2	4.4	1.1	6.3	-0.	-0.	70739.										
STD.DEVIATION	1.1	2.1	1.0	2.5	-0.	-0.	266.										

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REACTOR 6 OUTAGE FUNCTION EXPECTATION REPORT

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VARIANCES FOR THE BASIC TASKS REQUIRED
TO RE-ESTABLISH ON-LINE PRODUCTION STATUS.

**ALL DATA IN HOURS-EXCEPT SECONDARY FUNCTION=21=TUBE COUNT.

** 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 TOTAL	47	11	6	10	27	13	5	60	47	9	12	7	12	18	51	54	15	27	4	2	56

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SECONDARY FUNCTION NUMBER	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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REACTOR 7 OUTAGE FUNCTION EXPECTATION REPORT

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**ALL DATA IN HOURS-EXCEPT SECONDARY FUNCTION=21=TUBE COUNT.

** 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 TOTAL	27	18	1	4	0	9	1	28	23	9	15	14	11	4	25	27	12	10	1	0	29

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21										
FUNCTION TOTAL																	
TOT.HOURS DWN	526.2	155.2	0.3	16.6	0.	21.9	14.9	304.3	34.6	26.9	112.2	52.6	15.9	5.5			
INCIDENTS	27	18	1	4	0	9	1	28	23	9	19	14	11	4			
AVERAGE DOWN	19.5	8.6	0.3	4.1	0.	2.4	14.9	10.9	1.5	3.0	7.5	3.8	1.4	1.4			
VARIANCE	232.3	28.0	0.	5.8	-0.	2.0	0.	103.5	1.1	12.7	46.2	11.2	3.4	0.8			
STD.DEVIATION	15.2	5.3	0.	2.4	-0.	1.4	0.	10.2	1.1	3.6	6.8	3.4	1.8	0.9			
FUNCTION TOTAL																	
TOT.HOURS DWN	89.6	90.5	18.7	38.0	2.4	0.	14053.										
INCIDENTS	25	27	12	10	1	0	29										
AVERAGE DOWN	3.6	3.4	1.6	3.8	2.4	0.	485.										
VARIANCE	1.1	2.6	1.8	15.4	0.	-0.	189312.										
STD.DEVIATION	1.0	1.6	1.3	3.9	0.	-0.	435.										

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DECLASSIFIED

REACTOR 8 OUTAGE FUNCTION EXPECTATION REPORT

APRIL 1961 TO MAY15 1962

HW-5716P

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.

•• 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 TOTAL	24	12	1	2	2	8	0	26	17	1	16	10	10	8	26	27	16	5	1	0	24

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21	8	9	10	11	12	13	14
FUNCTION TOTAL	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
TOT.HOURS DWN	24	12	1	2	2	8	0	26	17	1	16	10	10	8
INCIDENTS	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
AVERAGE DOWN	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
VARIANCE	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
STD.DEVIATION														
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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ION REPORT

APRIL 1961 TO MAY15 1962

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USE FUNCTION **

14 15 16 17 18 19 20 21

68 309 319 141 183 9 3 306

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SECONDARY
FUNCTION NUMBER

	15	16	17	18	19	20	21										
FUNCTION TOTAL																	
TOT.HOURS DWN	4638.9	669.3	617.0	259.6	933.8	1137.7	120.5	6656.6	755.1	102.1	485.6	451.7	186.7	395.3			
INCIDENTS	291	135	29	57	100	122	29	335	241	48	122	81	85	68			
AVERAGE DOWN	15.9	5.0	2.1	4.6	9.3	9.3	4.2	19.9	3.1	2.1	4.0	5.6	2.2	5.8			
VARIANCE	321.8	19.9	4.4	30.6	40.1	117.0	12.9	1453.9	17.9	5.6	17.3	41.1	9.1	839.8			
STD.DEVIATION	17.9	4.5	2.1	5.5	6.3	10.9	3.6	38.1	4.2	2.4	4.2	6.4	3.0	29.0			

FUNCTION TOTAL
TOT.HOURS DWN
INCIDENTS
AVERAGE DOWN
VARIANCE
STD.DEVIATION

1113.7	1496.1	262.3	468.9	72.6	11.1	75854.											
309	319	141	183	9	3	306											
3.6	4.7	1.9	2.6	8.1	3.7	248.											
3.9	9.6	3.7	8.1	26.9	8.2	127331.											
2.0	3.1	1.9	2.8	5.2	2.9	357.											

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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.

- Cause 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 Poser Failure
 10 = Oriface Failure
 11 = Control Rod Failure
 12 = Scheduled Overbore
 13 = Water Supply Failure
 14 = Ball Drop - Loss of Reactivity
 15 = Plugged Rear Nozzles
 16 = Faulty Thermocouples

APPENDIX

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	REACTOR1	REACTOR2	**TOTAL DOWN INCIDENTS**		REACTOR5	REACTOR6	REACTOR7	REACTOR8
			REACTOR3	REACTOR4				
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.	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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DEPARTMENT SUMMARY

	TOTAL HOURS	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

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
1136.8	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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****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			1457.5		
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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REACTOR1 REACTOR2 REACTOR3 REACTOR4 REACTOR5 REACTOR6 REACTOR7 REACTOR8

6044.2 1214.6 3074.2 1649.0 657.6 660.1

INTERVAL BETWEEN LIKE OUTAGES BY CAUSE

CAUSE 6

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REACTOR1 REACTOR2 REACTOR3 REACTOR4 REACTOR5 REACTOR6 REACTOR7 REACTOR8

4389.9
4147.9

3551.9

529.7
753.4
6536.2

704.3
1000.8
2965.5

1079.1

INTERVAL BETWEEN LIKE OUTAGES BY CAUSE

CAUSE 7

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

REACTOR1

REACTOR2

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

CAUSE 8

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REACTOR1 REACTOR2 REACTOR3 REACTOR4 CAUSE 9 REACTOR5 REACTOR6 REACTOR7 REACTOR8

5588.9

1373.5

17.8

3146.1

1833.2

6220.0

INTERVAL BETWEEN LIKE OUTAGES BY CAUSE

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

REACTOR1 REACTOR2 REACTOR3 REACTOR4 CAUSE10 REACTOR5 REACTOR6 REACTOR7 REACTOR8

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REACTOR1 REACTOR2 REACTOR3 REACTOR4 REACTOR5 REACTOR6 REACTOR7 REACTOR8
INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE11 540.7

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

REACTOR1

REACTOR2
3112.7

REACTOR3

REACTOR4

REACTOR5

REACTOR6

REACTOR7

REACTOR8

CAUSE12

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REACTOR1 272.6
REACTOR2
REACTOR3 REACTOR4 REACTOR5 REACTOR6 REACTOR7 REACTOR8
INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE13 517.8
28.6

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CAUSE 14

REACTOR 8

REACTOR7

REACTOR6

REACTOR5

REACTOR4

REACTOR 3

REACTOR 2

REACTORI

1.1

10.1

115.3

FACTOR 1
312.5

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REACTOR1 REACTOR2 REACTOR3 REACTOR4 REACTOR5 REACTOR6 REACTOR7 REACTOR8
5512.3

INTERVAL BETWEEN LIKE OUTAGES BY CAUSE
CAUSE15

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REACTOR1 3936.5 REACTOR2 3340.8 REACTOR3 REACTOR4 8137.4 REACTOR5 REACTOR6 0.7 REACTOR7 REACTOR8

***INTERVAL BETWEEN LIKE OUTAGES BY CAUSE**

CAUSE16

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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.
CAUSE 2	1144.2	1571.3	637.6	810.2	712.8	804.9	460.2	608.0
CAUSE 3	1794.7	0.	0.	0.	1515.0	0.	1445.1	0.
CAUSE 4	220.8	302.5	752.3	1088.3	386.4	480.9	641.1	806.9
CAUSE 5	1498.1	803.6	617.0	689.9	848.5	909.2	798.0	850.0
CAUSE 6	0.	0.	6044.2	0.	1979.3	972.8	0.	0.
CAUSE 7	0.	0.	4268.9	171.1	3551.9	0.	0.	2606.5
CAUSE 8	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE 9	5588.9	0.	0.	0.	1592.6	1290.9	6220.0	0.
CAUSE10	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE11	0.	0.	0.	0.	0.	0.	0.	0.
CAUSE12	0.	0.	3112.7	0.	0.	0.	0.	0.
CAUSE13	272.6	0.	0.	0.	0.	0.	0.	273.2
CAUSE14	312.5	0.	0.	0.	0.	115.3	0.	10.1
CAUSE15	5512.3	0.	0.	0.	0.	0.	0.	0.
CAUSE16	3936.5	0.	3340.8	0.	0.	0.	8137.4	0.

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