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TELEX
89-2693 (SHAWLAW WSH)
CABLE "SHAWLAW"
EDWARD B. CROSLAND
COUNSEL

October 9, 1980

Ivan W. Smith, Esquire
Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Linda W. Little
Atomic Safety and Licensing Board
5000 Hermitage Drive
Raleigh, North Carolina 27612

Robert H. Jordan
Atomic Safety and Licensing Board
West Outer Drive
Clark Ridge, Tennessee 37830

Metropolitan Edison Company (Three Mile Island Unit 1),
Docket 50-289; Restart

Dear Chairman Smith and Members of the Board:

Pursuant to your Memorandum and Order on TMIA Contention 5 of September 24, 1980, enclosed please find a copy of the work requests designated by Three Mile Island Alert as their proposed exhibits in their filing of October 3, 1980. Work request 23340 (listed under Mr. Shovlin) is not enclosed, as we have been unable to locate this document.

Very truly yours,

Ernest L. Blake, Jr.
Ernest L. Blake, Jr.
Counsel for Licensee

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

cc: Service List
Enclosures 8010140 +

292

G

DS03
S111

October 9, 1980

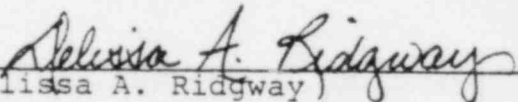
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
METROPOLITAN EDISON COMPANY)	Docket No. 50-289
)	(Restart)
(Three Mile Island Unit 1))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing proposed exhibits of Three Mile Island Alert were served this 9th day of October, 1980 by deposit in the U.S. Mail, first class, postage prepaid (unless otherwise noted), to the parties identified on the attached Service List.



Delissa A. Ridgway

SERVICE LIST

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Judith H. Johnsrud
Environmental Coalition on Nuclear Power
433 Orlando Avenue
State College, Pennsylvania 16801
- Marvin I. Lewis
6504 Bradford Terrace
Philadelphia, Pennsylvania 19149

* Served via hand delivery

** Served via Federal Express

WORK REQUEST APPROVAL
TMI Nuclear Station

M312

Work Request Procedure A.P. 1016 Sect. 6.01
should be used as a guide in filling out this form.

Work Request No. 15350
Priority 1A

VO Account No. 7203/336/1 NPRD Form Req'd No

M

Items 1 through 5 completed by originator

1. System TERMINATE COOLING SYS

2. Component (name & number) FEEDBACK CONTROL

3. Describe malfunction or modification and recommended corrective action.

STOPPING ICF - 1A/18 JUNE 76 AT 11:00

4. Originator L.H. Brown Date/Time: 5/11/76 12:40

5. Originator's Supervisor's Signature L.H. Brown FOR FILE

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Yes No
- 7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes No
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10, also Quality Control Dept. must review the work request prior to commencement of work. Yes No
- 9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
- 10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

*PORC reviewed
procedure 1410-81
attached
M. Kelly 5-11-76*

Line: Station Superintendent

Date

11. Plant status or Pre requisite conditions required for performance of work.

operating a Station

1410-81
002

a. Equipment

b. Environment

d. Nuclear

13. Post Maintenance Testing required and Acceptance Criteria:

*DIP = 12**

*Round initial O/P when filter is placed in penne 413**

14. Estimated manhours to perform job: E _____ IC _____ M 2 U _____

15. Maintenance Foreman Assigned: W. Donohue

16. QC Dept. review, if required in item No. 8 Richard J. P. Kelly Date 5/11/76

17. Supervisor of Maintenance approval to commence work: RC Date 5/11/76

18. Shift Foreman's approval to commence work: J. Bolte Date 5/11/76

46
Tagging Assignment No. (126)

88387
Referral Work Permit No. (2414) - 8480

19. Maintenance Foreman's comments on work performed:

NOTE: Filter filters will now be changed All Filters. changed using approved standing procedure 01410-F1

W. Donohue
Maintenance Foreman's Signature

2-4-78
5/11/76
Date/Time

20. Work completed and component aligned for testing:

J. Bolte 2/17/76
Shift Foreman's Signature

5/11/76
Date

21. Testing completed and component released for normal operation:

J. Bolte 2/17/76
Shift Foreman's Signature

5/11/76
Date

22. Quality Control Department review of work and testing completed (QC work only).

Not Submitted

2/15/78
Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification for work has been signed off as required. Machinery history entry and bills made, if required.

8
Actual hours to perform job

RC
Supervisor of Maintenance Signature

2-15-78
Date

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.
*Filter Elements replacement
1410-F1*
2. Purpose
Change element in Filter IC-F-1A/B
3. Description of system or component to be worked on.
Intermediate cooling system
4. References
*4.1 TME Unit #1, AP1002
4.2 TME Unit #2, AP1003*
5. Special Tools, Materials and Qualifications required.
NONE
6. Detailed Procedure (attach additional pages as required)
*6.1 Comply with refs. 4.1 and 4.2
See attached procedure*

Supervisor of Maintenance recommends approval BT. J. L. Date 5-11-76

*PORC Recommends approval - Chairman _____ Date _____

*Unit Station Superintendent Approval _____ Date _____

*NOTE These approvals required only on Nuclear Safety Related Radiating work permit jobs.

004

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.

*Filter Elements replacement
1410-F1*

2. Purpose

Change element in Filter IC-F-1A/B

3. Description of system or component to be worked on

Intermediate cooling system

4. References

4.1 TMI unit #, AP1002

4.2 TMI unit #, AP1003

5. Special Tools, Materials and Qualifications required

NONE

6. Detailed Procedure (attach additional pages as required)

6.1 Comply with refs. 4.1 and 4.2

See attached procedure

Supervisor of Maintenance recommends approval *Dh Sh. L* Date *5-11-76*

*PORC Recommends approval - Chairman _____ Date _____

*Unit/Station Superintendent Approval _____ Date _____

*NOTE These approvals required only on Nuclear Safety Related, Radiation work permit jobs

004

1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to limited size of the form additional pages may be attached as required. Work Request process P. 1015 Sect. 6 should be used as a guide in preparing the maintenance procedure.

Procedure Title & No.: 1410-F1 Filter Elements Replacement

Purpose:

- 1 The purpose of the procedure is to change filter elements on nuclear safety related components and Q.C. components.

Description of system or component to be worked on:

- 1 Any system having replaceable filters.

References:

- 1 Manufacturers instruction manual

Plant Status or Environmental Conditions required for performance of work:

- 1 Operating or shutdown if the filter can be isolated.

Hazards and Precautions:

- 1 Personnel - N/A
- 1 Equipment - Tag out Filter per Hot-Ed tagging procedure. Inert filter is being used.
- 1 Environment - N/A
- 1 Nuclear - N/A (See radiation work permit). Inert filter leakage is contained in Hot-Ed enclosure.

Special Tools, Materials and Qualifications required:

- 1 Replacement filter elements

Attached Procedure (attach additional pages as required)

Additional Maintenance Testing required and Acceptance Criteria:
Pressurize system and test for leaks.

CPU Test Superintendent approval of test (during S/U or *[Signature]*)

Supervisor or Maintenance recommends approval *[Signature]* Date *[Date]*

*PORC recommends approval - Chairman *[Signature]* Date *[Date]*

*Station Superintendent/Asst. Superintendent Approval *[Signature]* Date *[Date]*

These approvals required only on Q.C. or Radiation Work Permit jobs.

These sections are not required to be filled in prior to use for generic procedures which are prepared before their need arises. These two sections may be approved prior to use by telephone call to the PORC Chairman and Superintendent/Assistant Superintendent.

8.0 PROCEDURE

- 8.1 Tag out system
- 8.2 Vent and drain filter
- 8.3 Remove filter cover
- 8.4 Remove old filter element(s)
- 8.5 Insert new filter element(s) - see per vendor's procedure.
- 8.6 Replace filter cover

11.12

MET-ED
Quality Control

ACCEPT

WR
15350

Purchase Order 25000

Item No. 1

Q.C. No. 10-11-100

Date 3/21/70

MET-ED

Quality Control

ACCEPT

Purchase Order

Item No.

Q.C. No.

Date

DO NOT REMOVE

THIS TAG

097

MAT-80
Quality Control

ACCEPT

DO NOT REMOVE
THIS TAG

008

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 7
W.O./Account No. 1800 B/S 30.7 NPRD Form Req'd No

Work Request No. 21636
Priority IIA
M

Items 1 through 5 completed by originator

1. System: IWT

2. Component (name & number) IWT-V-55, 56, 58

3. Describe malfunction and cause of malfunction (if known) or modification desired.

ALL THREE OF THESE VALVES NEED TO BE REBUILT AS SOON AS POSSIBLE. LEAK THROUGH AND ALSO LEAK ACID OUT ON FLOOR.

4. Originator: L. N. M Date/Time: 10-13-77/0730

5. Originator's Supervisor's Signature L. N. M / W. K. ...

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

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Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

M. I. ...

WORK REQUEST APPROVAL
TMI Nuclear Station

2 WT

Unit No. 1

Work Request No. 12825

Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Priority QA

W.O./Account No. TR003/5307 NPRD Form Req'd. NO

M

Items 1 through 5 completed by originator

1. System: I WT

2. Component (name & number) WT-V-57 & 58

3. Describe malfunction or modification and recommended corrective action.

WT-V-58 LEAKS THROUGH

WT-V-57 DIAPHRAGM LEAKS TO FLOOR

See Sam Jules.

4. Originator: Kidwell Date/Time: 1300 12/9/75

5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes _____ No

7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes _____ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes _____ No

9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes _____ No _____

10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

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11. Plant status or Pre-requisite conditions required for performance of work.

Operating or Shutdown

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

13. Post Maintenance Testing required and Acceptance Criteria.

Valves do not heat under operating pressure

14. Estimated manhours to perform job: E _____ IC _____ M 16 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *LDM Skovle* Date 12-9-75

18. Shift Foreman's approval to commence work _____ Date _____

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Cancel/Covered by WR 21636

Work Completed - Maintenance Foreman's Signature _____

Date/Time _____

20. Work completed and component aligned for testing.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

QC Department _____

Date _____

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

Cancelled WR 12825

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1

Work Request No. 20287

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority 2A

W.O./Account No. T8003/5307 NPRD Form Req'd. No

M

Items 1 through 5 completed by originator

1. System: IWT

2. Component (name & number) DRAIN VALVE WT-Y-57

3. Describe malfunction or modification and recommended corrective action.

Should Be AUTO VALVE

This valve was an auto valve

that we just rigged to a manual valve when it failed. No mod changes needed just

4. Originator: DIMMEY Date/Time: 5/26/77 0600

5. Originator's Supervisor's Signature Book/Kinden for the security valve!!!

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No

7. a. Does the work require a Radiation Work Permit? Yes No

b. Is an approved procedure required to minimize personnel exposure? Yes No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No

9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent

Date

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown

AP 1016

Comply with the Provisions set forth in AP 1002 and Ret Ed Safety Manual

- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

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13. Post Maintenance Testing required and Acceptance Criteria.

Existing valve repaired

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *W. Meyer* Date *6-9-77*

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. 1 Work Request No. 23310
W.O./Account TE0023/530 NRPD Form Req'd No Priority 1A

Items 1 through 5 completed by originator

1. System: A/A

2. Component (name & number) DRP SHIELD

3. Describe malfunction and cause of malfunction (if known) or modification desired.
INSTALL DRP SHIELD UNDER FW-V-5A - LEAKAGE FROM VALVE IS CAUSING DAMAGE TO FW-V-17A INTERNAL & EXTERNAL COMPONENTS. SLOPE INSTALLATION ~~TO~~ TO PROVIDE CONTROLLED RUNOFF AWAY FROM FW-V-17A

4. Originator: H.W. Wilson Date/Time: 3-30-78

5. Originator's Supervisor's Signature H.W. Wilson

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. Yes ___ No

7a. Does work require an RWP Yes ___ No

7b. Is an approved procedure required to minimize personnel exposure. Yes ___ No

8a. Is work on a QC component as defined in GP 1008. Yes ___ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes ___ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent _____ Date _____

10a. Is the system on the Environmental Impact list in AP 1026 Yes ___ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes ___ No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

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Unit Superintendent/Supervisor of Operations _____ Date _____

11. Plant status or prerequisite conditions required for work.
Operating on SD should be done before startup if possible

20' line

302 C51

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: ^{As requested} E _____ IC _____ M 24 U _____

15. Maintenance Foreman Assigned: A W Conroy

16. QC Dept. review, if required in item No. 8

QC Supervisor NA Date _____

17. Supervisor of Maintenance approval to commence work: RC Friedman Date 3-30-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required NA
Tagging Application No.

NA
Radiation Work Permit No.

19. Comments on work performed:

Installed Drip Pan.

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

8-31
Date

A W Conroy

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

[Signature]
Shift Foreman's Signature

8-31-79
Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

[Signature]
Shift Foreman's Signature

8-31-79
Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

20
Actual Manhours to perform job

[Signature]
Supervisor of Maintenance Signature

8/4/79
Date

007

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. I
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 16879
Priority IA

W.O./Account No. T8003/530.6 NPRD Form Req'd. No

I

Items 1 through 5 completed by originator

1. System: Unit 2 ICS/NNE Cabinets 151 +152
2. Component (name & number) Pressure Level Strug
3. Describe malfunction or modification and recommended corrective action.

Perform CO₂ and Halon discharge tests on the referenced equipment and record response to aid in evaluating effect of Unit 1 Cardox System on ICS/NNE

4. Originator: V.P. Walsh Date/Time: 1300 9-14-76

5. Originator's Supervisor's Signature VPO for J.J. Colitz

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes ___ No
7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes ___ No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes NPO No
9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes ___ No
10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure. VPO
9-14-76
- 10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

J.J. Colitz 9-14-76

Line/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

N/A Work to be performed on

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12. Limits and Precautions:
- a) Personnel AP 1002, 1003 and West El Safety Manual
 - b) Equipment If at any time during this test results indicate that equipment damage may result, or the instrumentation exhibits erratic behavior, the CO₂ test committee will stop the test and determine the course of action to be taken.
 - c) Environment
 - d) Nuclear

NOT AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.
Acceptance Criteria stated in the basic procedure

14. Estimated manhours to perform job: E _____ IC 12 M _____ U _____

15. Maintenance Foreman Assigned: Snyder

16. QC Dept. review, if required in item No. 8 N/A Date _____

17. Supervisor of Maintenance approval to commence work: [Signature] Date _____

18. Shift Foreman's approval to commence work C. S. Guthrie Date 9/14/78

N/A
 Tagging Application No.

N/A
 Radiation Work Permit No.

19. Maintenance Foreman's comments on work performed:

Collected Required DATA
[Signature]
[Signature]

2-9-78
2-7-78
 Date/Time

Work Completed - Maintenance Foreman's Signature

20. Work completed and component aligned for testing.

[Signature]
 Shift Foreman's Signature

2/9/78
 Date

21. Testing completed and component released for normal use.

[Signature]
 Shift Foreman's Signature

2/9/78
 Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

16
 Actual Manhours to perform job

[Signature]
 Supervisor of Maintenance Signature

2-9-78
 Date

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. _____

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

CO₂ test on Unit II ECS/NNE

2. Purpose:

To determine instrument response to CO₂ for evaluation of Unit I Cardox System

3. Description of system or component to be worked on.

Cabinets 151 + 152 of Unit II ECS/NNE

4. References:

NONE

5. Special Tools, Materials and Qualifications required.

As stated in the procedure

6. Detailed Procedure (attach additional pages as required)

Attached

Supervisor of Maintenance recommends approval

L. J. Smith

Date 2-14-76

* PORC Recommends approval - Chairman

Date

* Unit/Station Superintendent Approval

Date

*NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

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TEST TO DETERMINE EFFECT OF DISCHARGE OF
CARBON DIOXIDE ON ELECTRONIC INSTRUMENTATION

1.0 Purpose of Test:

This test is being conducted to determine the effect of discharge of carbon dioxide on electronic instrumentation used to automatically control the primary and secondary plant at power in Three Mile Island Nuclear Generating Station Unit-1. The test will be conducted by discharging a known amount of carbon dioxide into a specially-built enclosure around non-nuclear instrumentation (NNI) Cabinets 151 and 152 at TMI-2 which contain the necessary electronic modules for the pressurizer level, reactor coolant flow and reactor coolant inlet temperature (narrow range), and monitoring the outputs of selected modules on multi-channel recorders, while the modules are energized and dummy inputs simulating normal process conditions are provided. Also the pressure, temperature, ~~humidity~~ and electrostatic charge that may be developed when the CO2 is discharged will be monitored. ~~on the multi-channel recorders.~~

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VPO
This unit
work will be
flow with the
the of manual
Review the
procedures
inserted.

2.0 PREREQUISITES - (Sign off sheet for Prerequisites attached)

2.1 THE ^{Basel} 721 SYSTEM MODULES CONTAINED IN UNIT 2 NNI CABINETS 151 AND 152 WILL BE ENERGIZED ^{shown on the attached drawing} PRIOR TO THE TEST.

2.2 THE TEST EQUIPMENT INPUTS WILL BE SET AT ^{should have been performed, and remains not part of the test plan and is to be removed and 10. Work sheets should be provided to provide normal values on forms} THE REQUIRED POINT PER TABLE 1.

2.3 A MINIMUM OF 15 MINUTES OF BASELINE DATA WILL BE REQUIRED WITH THE INPUTS ESTABLISHED AS PER TABLE I. THE ^{Basel} 721 SYSTEM MODULES WILL BE ENERGIZED ^{to provide normal values on forms} AND RECORDING WILL BE INITIATED.

2.4 THE 120VAC SUPPLY TO THE NNIX BUS FOR THESE MODULES WILL BE RECORDED SINCE THE POWER SOURCE WILL BE TEMPORARY POWER. ~~Not required~~ ~~NPD~~ VAC

2.5 ENSURE THE THE BAILEY 721 SYSTEM CABINET FANS ARE FORCING AIR THROUGH THE MODULES.

2.6 ALL ROOM ENVIRONMENTAL MONITORING EQUIPMENT CHECKS OUT AS FOLLOWS

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Instrument	Location	RANGE	Recorder Point
RTD #14	ENCLOSURE AIR TEMP.	-70 TO 80°F	
RTD #2	C. #151 DUCT INLET TEMP.	-20 TO 80°F	
RTD #31	C. #151 DUCT OUTLET TEMP.	-20 TO 80°F	
RTD #3 2 Thermocouples	C. #152 DUCT OUTLET TEMP. 151+152 Duct	-20 TO 80°F -20 TO 80°F	separate recorder
PI	ENCLOSURE PRESS.	0-15	NA

1" BISI inlet
2" BISI outlet
2 →

ESVM
CO2 analyzer

ENCLOSURE ESC
Enclosure

0-3000
0-100%

NA
separate recorder

2.7 DETERMINE THE RELATIVE HUMIDITY AND DEWPOINT

IN THE ENCLOSURE PRIOR TO THE TEST USING DRY BULB 75° WET BULB 60°

A SLING PSYCHROMETER AND RECORD. 70% R.H.
D.P.

2.8 RECORD THE ROOM TEMPERATURE AND HUMIDITY AS INDICATED ON UETC INDICATORS IN SOUTHWEST CORNER OF THE UNIT #2 CABLE ROOM. 75° T
65% H

2.9 MODULE OUTPUTS MARKED WITH AN ASTERISK ON THE BAILEY DRAWINGS FIG. 1 FIG. 2 FIG. 3 and ~~FIG. 4~~ ~~FIG. 5~~ ~~FIG. 6~~ ~~FIG. 7~~ ~~FIG. 8~~ ~~FIG. 9~~ ~~FIG. 10~~ ~~FIG. 11~~ ~~FIG. 12~~ ~~FIG. 13~~ ~~FIG. 14~~ ~~FIG. 15~~ ~~FIG. 16~~ ~~FIG. 17~~ ~~FIG. 18~~ ~~FIG. 19~~ ~~FIG. 20~~ ~~FIG. 21~~ ~~FIG. 22~~ ~~FIG. 23~~ ~~FIG. 24~~ ~~FIG. 25~~ ~~FIG. 26~~ ~~FIG. 27~~ ~~FIG. 28~~ ~~FIG. 29~~ ~~FIG. 30~~ ~~FIG. 31~~ ~~FIG. 32~~ ~~FIG. 33~~ ~~FIG. 34~~ ~~FIG. 35~~ ~~FIG. 36~~ ~~FIG. 37~~ ~~FIG. 38~~ ~~FIG. 39~~ ~~FIG. 40~~ ~~FIG. 41~~ ~~FIG. 42~~ ~~FIG. 43~~ ~~FIG. 44~~ ~~FIG. 45~~ ~~FIG. 46~~ ~~FIG. 47~~ ~~FIG. 48~~ ~~FIG. 49~~ ~~FIG. 50~~ ~~FIG. 51~~ ~~FIG. 52~~ ~~FIG. 53~~ ~~FIG. 54~~ ~~FIG. 55~~ ~~FIG. 56~~ ~~FIG. 57~~ ~~FIG. 58~~ ~~FIG. 59~~ ~~FIG. 60~~ ~~FIG. 61~~ ~~FIG. 62~~ ~~FIG. 63~~ ~~FIG. 64~~ ~~FIG. 65~~ ~~FIG. 66~~ ~~FIG. 67~~ ~~FIG. 68~~ ~~FIG. 69~~ ~~FIG. 70~~ ~~FIG. 71~~ ~~FIG. 72~~ ~~FIG. 73~~ ~~FIG. 74~~ ~~FIG. 75~~ ~~FIG. 76~~ ~~FIG. 77~~ ~~FIG. 78~~ ~~FIG. 79~~ ~~FIG. 80~~ ~~FIG. 81~~ ~~FIG. 82~~ ~~FIG. 83~~ ~~FIG. 84~~ ~~FIG. 85~~ ~~FIG. 86~~ ~~FIG. 87~~ ~~FIG. 88~~ ~~FIG. 89~~ ~~FIG. 90~~ ~~FIG. 91~~ ~~FIG. 92~~ ~~FIG. 93~~ ~~FIG. 94~~ ~~FIG. 95~~ ~~FIG. 96~~ ~~FIG. 97~~ ~~FIG. 98~~ ~~FIG. 99~~ ~~FIG. 100~~ ~~FIG. 101~~ ~~FIG. 102~~ ~~FIG. 103~~ ~~FIG. 104~~ ~~FIG. 105~~ ~~FIG. 106~~ ~~FIG. 107~~ ~~FIG. 108~~ ~~FIG. 109~~ ~~FIG. 110~~ ~~FIG. 111~~ ~~FIG. 112~~ ~~FIG. 113~~ ~~FIG. 114~~ ~~FIG. 115~~ ~~FIG. 116~~ ~~FIG. 117~~ ~~FIG. 118~~ ~~FIG. 119~~ ~~FIG. 120~~ ~~FIG. 121~~ ~~FIG. 122~~ ~~FIG. 123~~ ~~FIG. 124~~ ~~FIG. 125~~ ~~FIG. 126~~ ~~FIG. 127~~ ~~FIG. 128~~ ~~FIG. 129~~ ~~FIG. 130~~ ~~FIG. 131~~ ~~FIG. 132~~ ~~FIG. 133~~ ~~FIG. 134~~ ~~FIG. 135~~ ~~FIG. 136~~ ~~FIG. 137~~ ~~FIG. 138~~ ~~FIG. 139~~ ~~FIG. 140~~ ~~FIG. 141~~ ~~FIG. 142~~ ~~FIG. 143~~ ~~FIG. 144~~ ~~FIG. 145~~ ~~FIG. 146~~ ~~FIG. 147~~ ~~FIG. 148~~ ~~FIG. 149~~ ~~FIG. 150~~ ~~FIG. 151~~ ~~FIG. 152~~ ~~FIG. 153~~ ~~FIG. 154~~ ~~FIG. 155~~ ~~FIG. 156~~ ~~FIG. 157~~ ~~FIG. 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774~~ ~~FIG. 775~~ ~~FIG. 776~~ ~~FIG. 777~~ ~~FIG. 778~~ ~~FIG. 779~~ ~~FIG. 780~~ ~~FIG. 781~~ ~~FIG. 782~~ ~~FIG. 783~~ ~~FIG. 784~~ ~~FIG. 785~~ ~~FIG. 786~~ ~~FIG. 787~~ ~~FIG. 788~~ ~~FIG. 789~~ ~~FIG. 790~~ ~~FIG. 791~~ ~~FIG. 792~~ ~~FIG. 793~~ ~~FIG. 794~~ ~~FIG. 795~~ ~~FIG. 796~~ ~~FIG. 797~~ ~~FIG. 798~~ ~~FIG. 799~~ ~~FIG. 800~~ ~~FIG. 801~~ ~~FIG. 802~~ ~~FIG. 803~~ ~~FIG. 804~~ ~~FIG. 805~~ ~~FIG. 806~~ ~~FIG. 807~~ ~~FIG. 808~~ ~~FIG. 809~~ ~~FIG. 810~~ ~~FIG. 811~~ ~~FIG. 812~~ ~~FIG. 813~~ ~~FIG. 814~~ ~~FIG. 815~~ ~~FIG. 816~~ ~~FIG. 817~~ ~~FIG. 818~~ ~~FIG. 819~~ ~~FIG. 820~~ ~~FIG. 821~~ ~~FIG. 822~~ ~~FIG. 823~~ ~~FIG. 824~~ ~~FIG. 825~~ ~~FIG. 826~~ ~~FIG. 827~~ ~~FIG. 828~~ ~~FIG. 829~~ ~~FIG. 830~~ ~~FIG. 831~~ ~~FIG. 832~~ ~~FIG. 833~~ ~~FIG. 834~~ ~~FIG. 835~~ ~~FIG. 836~~ ~~FIG. 837~~ ~~FIG. 838~~ ~~FIG. 839~~ ~~FIG. 840~~ ~~FIG. 841~~ ~~FIG. 842~~ ~~FIG. 843~~ ~~FIG. 844~~ ~~FIG. 845~~ ~~FIG. 846~~ ~~FIG. 847~~ ~~FIG. 848~~ ~~FIG. 849~~ ~~FIG. 850~~ ~~FIG. 851~~ ~~FIG. 852~~ ~~FIG. 853~~ ~~FIG. 854~~ ~~FIG. 855~~ ~~FIG. 856~~ ~~FIG. 857~~ ~~FIG. 858~~ ~~FIG. 859~~ ~~FIG. 860~~ ~~FIG. 861~~ ~~FIG. 862~~ ~~FIG. 863~~ ~~FIG. 864~~ ~~FIG. 865~~ ~~FIG. 866~~ ~~FIG. 867~~ ~~FIG. 868~~ ~~FIG. 869~~ ~~FIG. 870~~ ~~FIG. 871~~ ~~FIG. 872~~ ~~FIG. 873~~ ~~FIG. 874~~ ~~FIG. 875~~ ~~FIG. 876~~ ~~FIG. 877~~ ~~FIG. 878~~ ~~FIG. 879~~ ~~FIG. 880~~ ~~FIG. 881~~ ~~FIG. 882~~ ~~FIG. 883~~ ~~FIG. 884~~ ~~FIG. 885~~ ~~FIG. 886~~ ~~FIG. 887~~ ~~FIG. 888~~ ~~FIG. 889~~ ~~FIG. 890~~ ~~FIG. 891~~ ~~FIG. 892~~ ~~FIG. 893~~ ~~FIG. 894~~ ~~FIG. 895~~ ~~FIG. 896~~ ~~FIG. 897~~ ~~FIG. 898~~ ~~FIG. 899~~ ~~FIG. 900~~ ~~FIG. 901~~ ~~FIG. 902~~ ~~FIG. 903~~ ~~FIG. 904~~ ~~FIG. 905~~ ~~FIG. 906~~ ~~FIG. 907~~ ~~FIG. 908~~ ~~FIG. 909~~ ~~FIG. 910~~ ~~FIG. 911~~ ~~FIG. 912~~ ~~FIG. 913~~ ~~FIG. 914~~ ~~FIG. 915~~ ~~FIG. 916~~ ~~FIG. 917~~ ~~FIG. 918~~ ~~FIG. 919~~ ~~FIG. 920~~ ~~FIG. 921~~ ~~FIG. 922~~ ~~FIG. 923~~ ~~FIG. 924~~ ~~FIG. 925~~ ~~FIG. 926~~ ~~FIG. 927~~ ~~FIG. 928~~ ~~FIG. 929~~ ~~FIG. 930~~ ~~FIG. 931~~ ~~FIG. 932~~ ~~FIG. 933~~ ~~FIG. 934~~ ~~FIG. 935~~ ~~FIG. 936~~ ~~FIG. 937~~ ~~FIG. 938~~ ~~FIG. 939~~ ~~FIG. 940~~ ~~FIG. 941~~ ~~FIG. 942~~ ~~FIG. 943~~ ~~FIG. 944~~ ~~FIG~~

2.11

The directing of the CO₂ and Helium testing AND Evaluation of the test Results shall be done by the CO₂ TEST COMMITTEE.

The Committee consists of THE (UNIT 1-5)
UNIT I IFC ENGRS, IFC Foremen AND
MET ED Reading Engineering.

2.12 Make recorder paper for calibration range and circuit number from Fig 1-4.

BEST COPY AVAILABLE

Prerequisite Sign-off sheet

BEST COPY AVAILABLE

	SIGNATURE	DATE
2.1 NNI Cabinet 151 & 152 Modules calibrated	V P Calabrese	9-15-76
2.2 TEST EQUIPMENT inputs per TABLE I	N/P	9-15
2.3 Base line DATA TAKEN	N/P	9-15
2.4 Pure Source VOLTAGE MEASURED & RECORDED	N/A N/P	9-15
2.5 CABINET FANS RUNNING	N/P	9-15
2.6 ENVIRONMENTAL Equipment checked out	CO ₂ analysis not available N/P	9-15
2.7 RELATIVE HUMIDITY & dewpoint determined & RECORDED	N/P	9-15
2.8 Room Temp & humidity determined & RECORDED	N/P	9-15
2.9 Module OUTPUTS connected to Brush Recorders	N/P	9-15

	SIGNATURE	DATE
2.10 PICTURES of TEST SETUP TAKEN	<u>NPO</u>	<u>9-15</u>
2.11 NA		
2.12 Recorder traces marked	<u>NPO</u>	<u>9-15</u>

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8. A decade resistance box shall be connected to terminals 11 and 12 of 66/1-5-2 and the resistance value set at _____ Ohms to correspond to a pressurizer temperature of _____ °F. for input to the pressurizer level loop.
9. Before the discharge of CO2 and halon, temperature, pressure and humidity measurements in the room in which the cabinets are located, inside the cabinets and inside the enclosure around the cabinets shall be observed and recorded.

Procedure: CO2 Discharge Test

1. After ensuring prerequisites and precautions have been fully complied with and after all modules are energized and warmed up for about 15 minutes, dummy inputs applied to the various channels indicated earlier, and recorders connected to suitable AC supply, baseline data of modules and test points marked with an asterisk which will have been previously connected to recorders shall be established. ~~Also, data required in Table 1 shall be recorded.~~
2. A known amount of carbon dioxide (≥ 20 lbs) from a CO2 ^{TEST TANK} extinguisher shall be discharged ^{AT A MAXIMUM RATE} into the outer enclosure around the cabinets (151 and 152) through the opening provided on the side of the enclosure for insertion of the extinguisher nozzle. The amount of CO2 discharged has been calculated to provide a CO2 concentration of ≥ 60%. ^{(See Table 2).} The actual concentration shall also be ~~observed~~ measured AND DISCHARGED TERMINATED WHEN CONCENTRATION OF 260% IS REACHED. Record Data on Data Sheet 1. 15 minutes
3. The experimental setup shall be left in this state for approximately ~~one hour~~ or longer if equipment and module performance after the discharge of CO2 warrants monitoring the performance for a longer period of time and all necessary data recorded.

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4. At the end of this period a fan will be used to exhaust any residual CO₂ from the enclosure.

Modules, wiring, insulation shall then be visually examined for any moisture condensation, cracking of insulation, or deterioration of any nature. The CO₂ Test Committee will evaluate the test results and determine if testing may continue.

5. Upon the recommendation of the CO₂ Test Committee steps 1-4 may be repeated with a longer discharge time, if not proceed to step 6.
6. Repeat steps 1-5 except discharge the CO₂ test tank directly into the cabinet air intake (NOTE: This step may be deleted at the discretion of the CO₂ test Committee.)

HALON TEST:

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At the end of the CO₂ Test, steps 1-5 shall be repeated except this time 2.5 lbs Halon will be discharged into the cabinet air intake AND the effects observed and recorded. The amount of Halon discharged has been calculated to provide a Halon concentration of > 5 %.

ACCEPTANCE CRITERIA :

CO₂ AND Halon TEST RUN AS described IN the procedure. ^{NO} TEST data TAKEN AND ~~to be evaluated by CCE~~ ~~Test Cor.~~ A concentration of greater than 60% shall have been achieved, and ambient air temperature of < 15°F shall have been achieved, ^{for the test}. Selected portions of this procedure may be repeated in order to meet this acceptance criteria.

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Data Sheet 1

Test run # _____

type of gas _____
 duration of discharge _____ seconds
 * amount of gas discharged _____ lbs
 measured concentration _____ %

* This quantity is not directly measurable and will be estimated by the vendor representative who will be present for the Test.

Run 1 (^{to fill} line)	Run 2	Run 3	Run 4
CO ₂ Gas	CO ₂	CO ₂	H ₂ O
30 sec to	40 sec	120 sec	2 sec
<60%	>60%	100%	N/A

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TABLE #2

VOLUME CALCULATION OF ENCLOSURE (FROM FIG. 5)

$$D \times h \times W = \text{Vol ft}^3$$
$$6.5 \text{ ft} \times 8.5 \text{ ft} \times 4.0 \text{ ft} = 221.0 \text{ ft}^3$$

CALCULATION OF CO₂ CONCENTRATION

$$\text{DENSITY OF CO}_2 = 0.12341 \text{ lbs/ft}^3$$

60% CONCENTRATION

$$221.0 \text{ ft}^3 \times 0.12341 \text{ lbs/ft}^3 \times 0.6 = 16.56 \text{ lbs}$$

70% CONCENTRATION

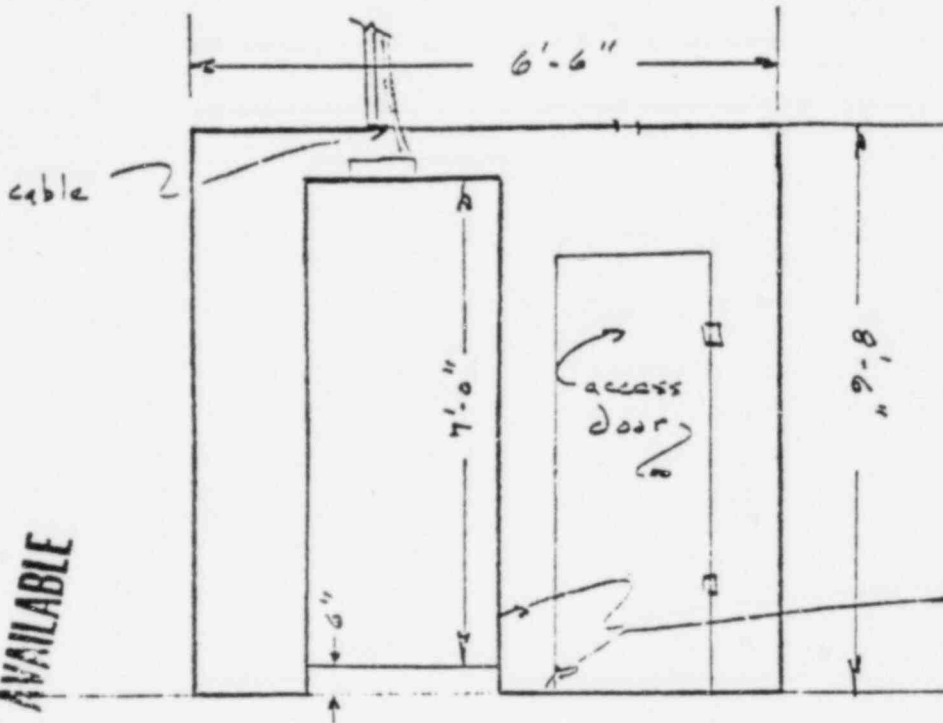
$$221.0 \text{ ft}^3 \times 0.12341 \text{ lbs/ft}^3 \times 0.7 = 19.09 \text{ lbs}$$

80% CONCENTRATION

$$221.0 \text{ ft}^3 \times 0.12341 \text{ lbs/ft}^3 \times 0.8 = 21.81 \text{ lbs}$$

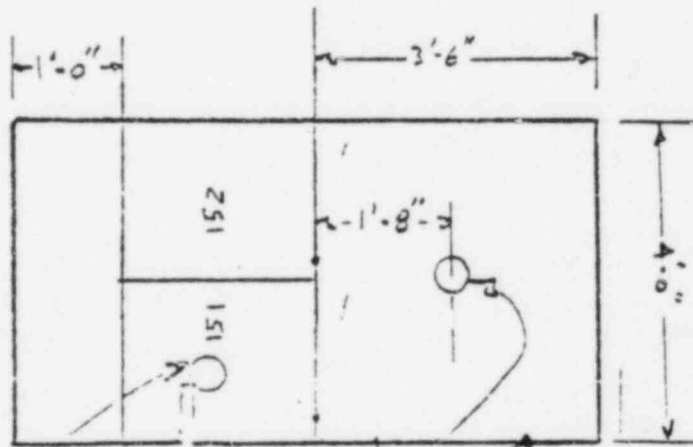
BEST COPY AVAILABLE

Enclosures For Cabs 151 & 152 Flay 305 & B



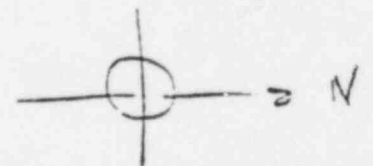
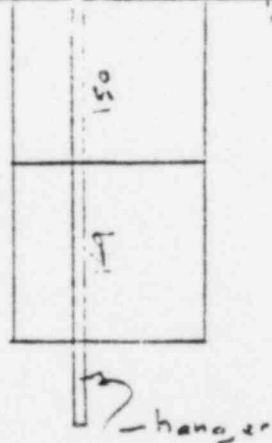
2
6.5 - d
4 - w
26.0
8.5 - h
130
208
221.0 cu ft

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hole for cable

Note
construction to be
1/2" plywood



PPK
4/10/72

TABLE 1

DESCRIPTION	TEST EQUIPMENT	INSTRUMENT LOCATION	* INSTRUMENT VALUE	CORRECTION FACTOR
Pressure in Lines	±10VDC Power Supply	0/1-5-2-314	VDC	210 μ
Pressure Temp	Diode Box	0/1-5-2-10, 11, 12, 13	Ω	650 °F
R.C. Inlet Temp	Diode Box	0/1-5-3-1, 7, 9, 14	Ω	556.3 °F
R.C. Flow	0-10VDC Power Supply	0/1-5-4-14 1/5	VDC	6.95×10^{-6} l^2/hr

* to be supplied by R. Lentz (GPU).

Approximate values used

NPO 9-15-76

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PROCEDURE Sign-off List

TEST RUN # 1-4 completed

NOTE type of TEST being run: 1 CO₂ 1 Halon
Discharge through provided opening ✓
Discharge into cabinet air intake N/A

PROCEDURE STEP	SIGNATURE	DATE
1. CO ₂ DISCHARGED & ≥ 60% CO ₂ CONCENTRATION MEASURED	<u>N.P.O.</u>	<u>9-15-76</u>
2. TEST RESULTS EVALUATED BY CO ₂ TEST COMMITTEE	<u>V.P.O.</u>	<u>10-5-76</u>

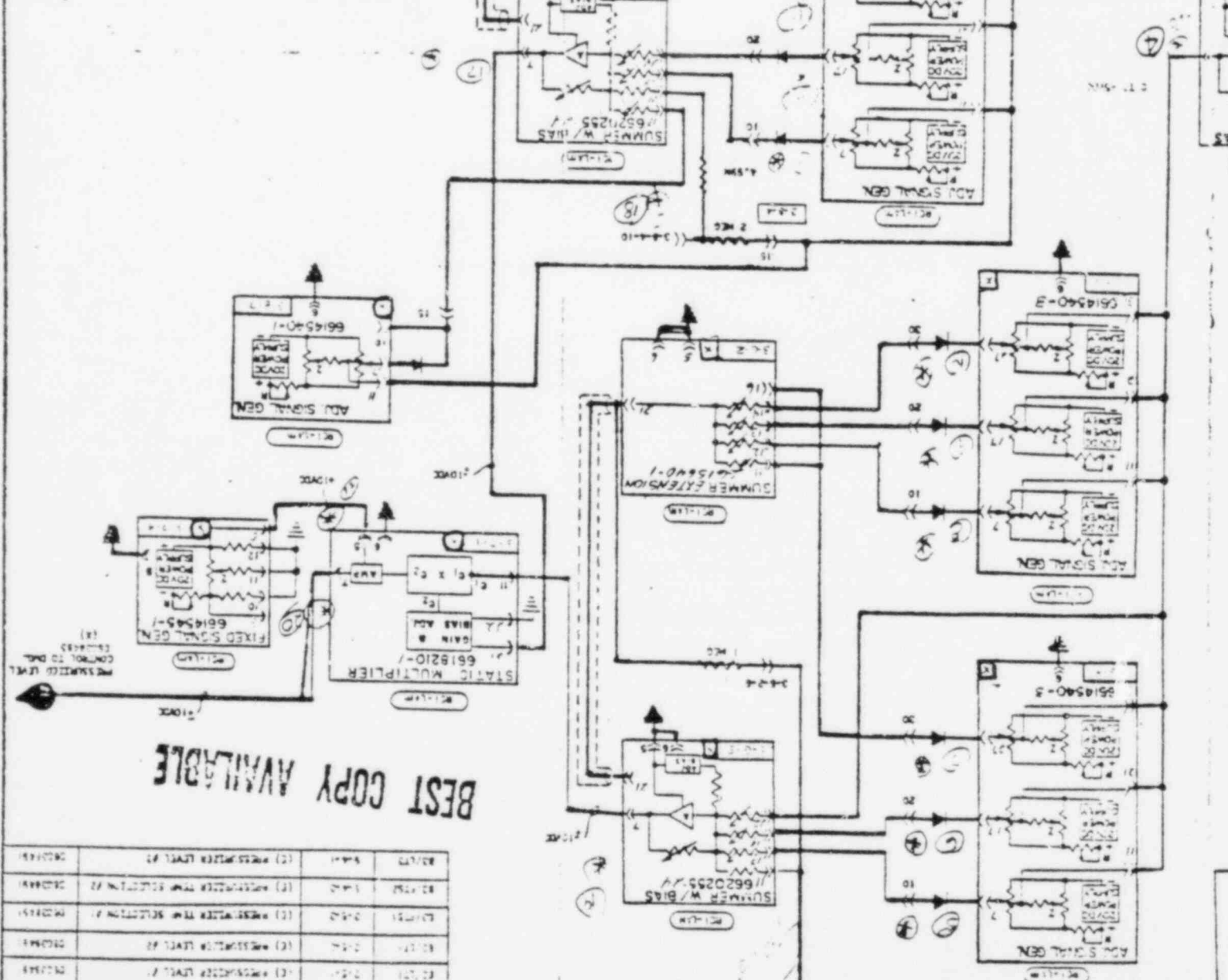
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CUSTOMER: JERRY D. WILSON, WATER METER STATION #2
 CONTRACTING BLDG. 5000 AND 5001
 5000 50TH AVE. N.E.
 BAYCO JOB NO. 15121
 CURR. ORDER NO. 15121-2-1-15

BARBOCK & WILCOX
 DRAWING NUMBER
 620-0008

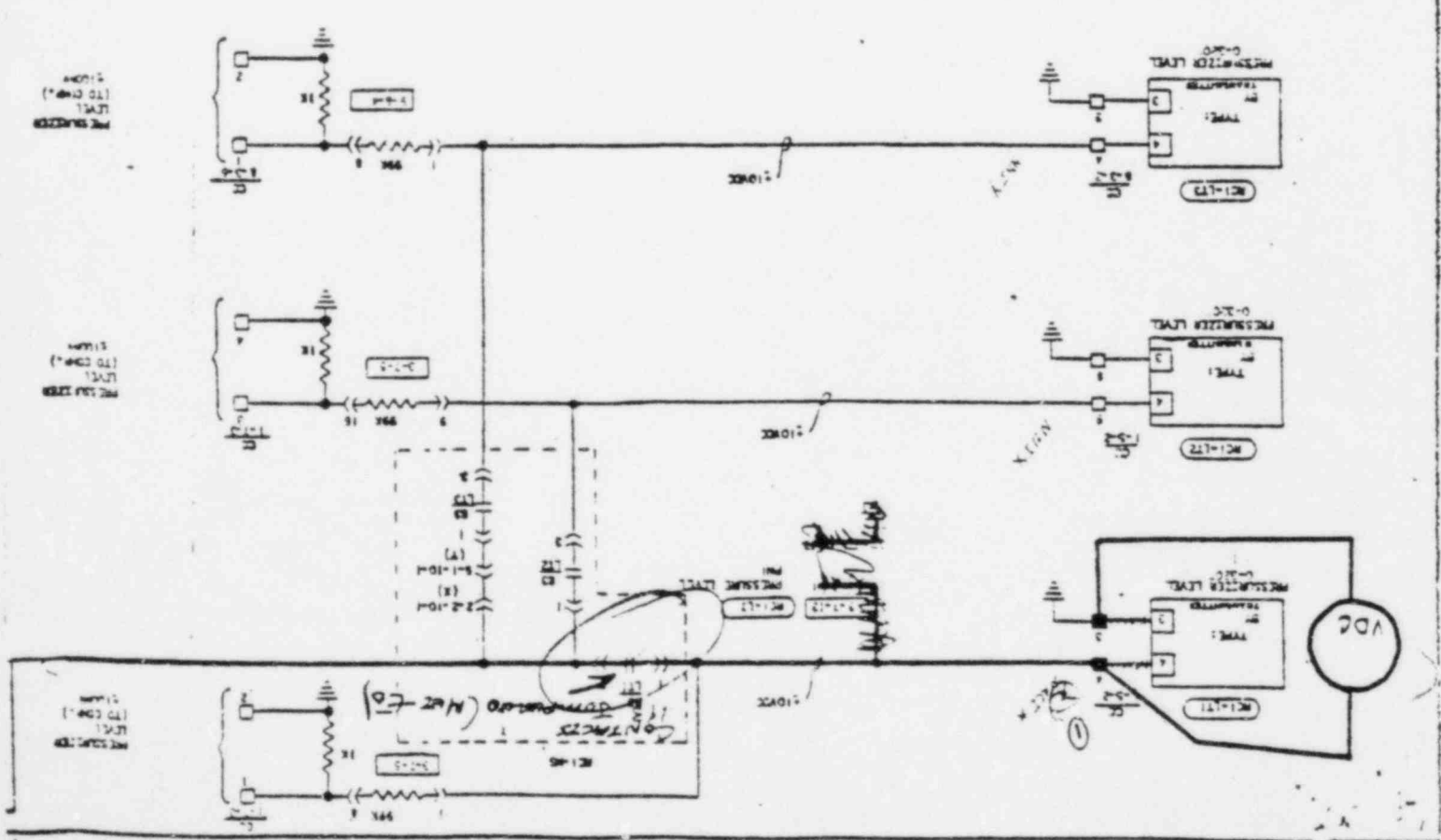
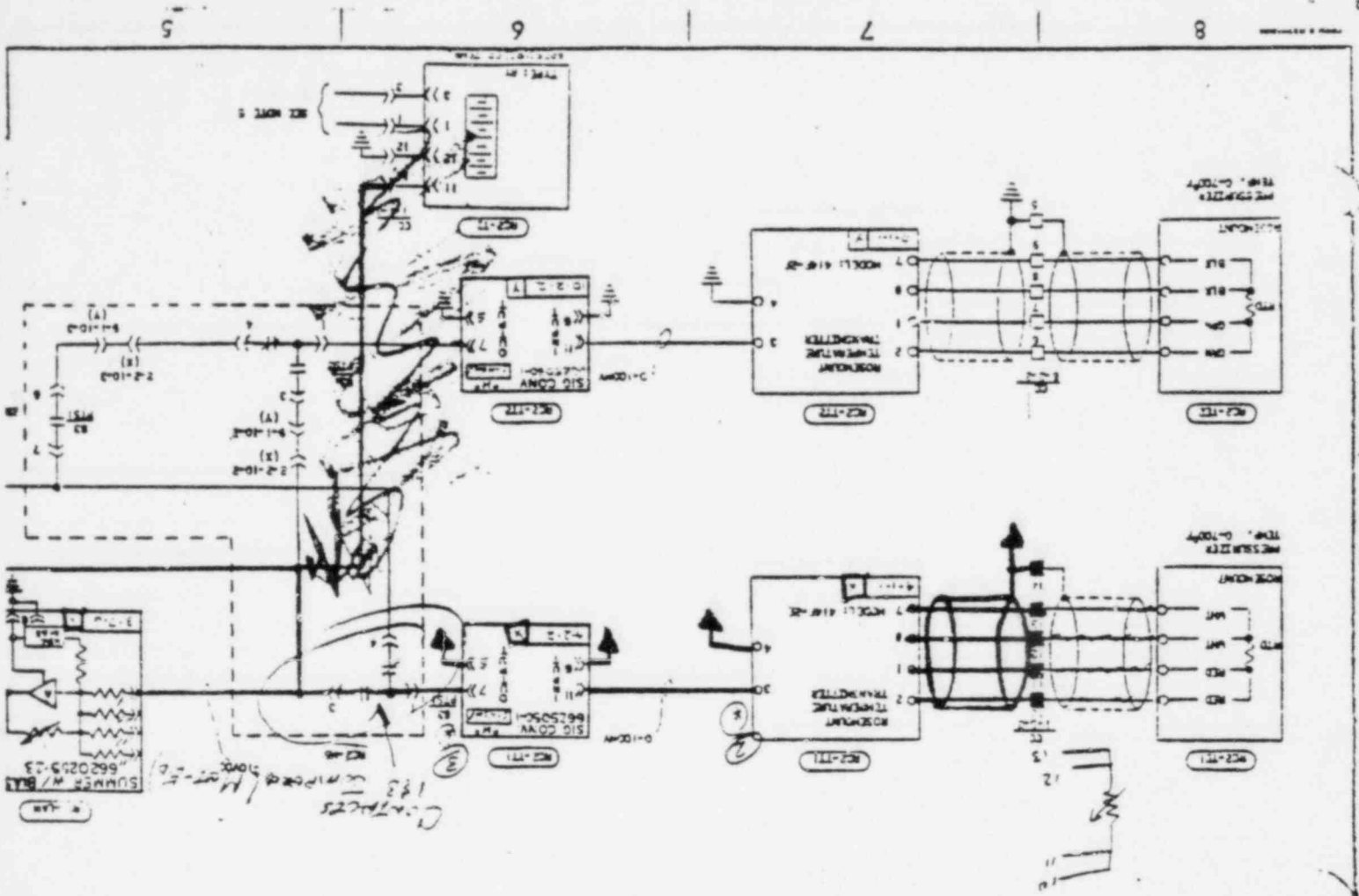
FIGURE 1

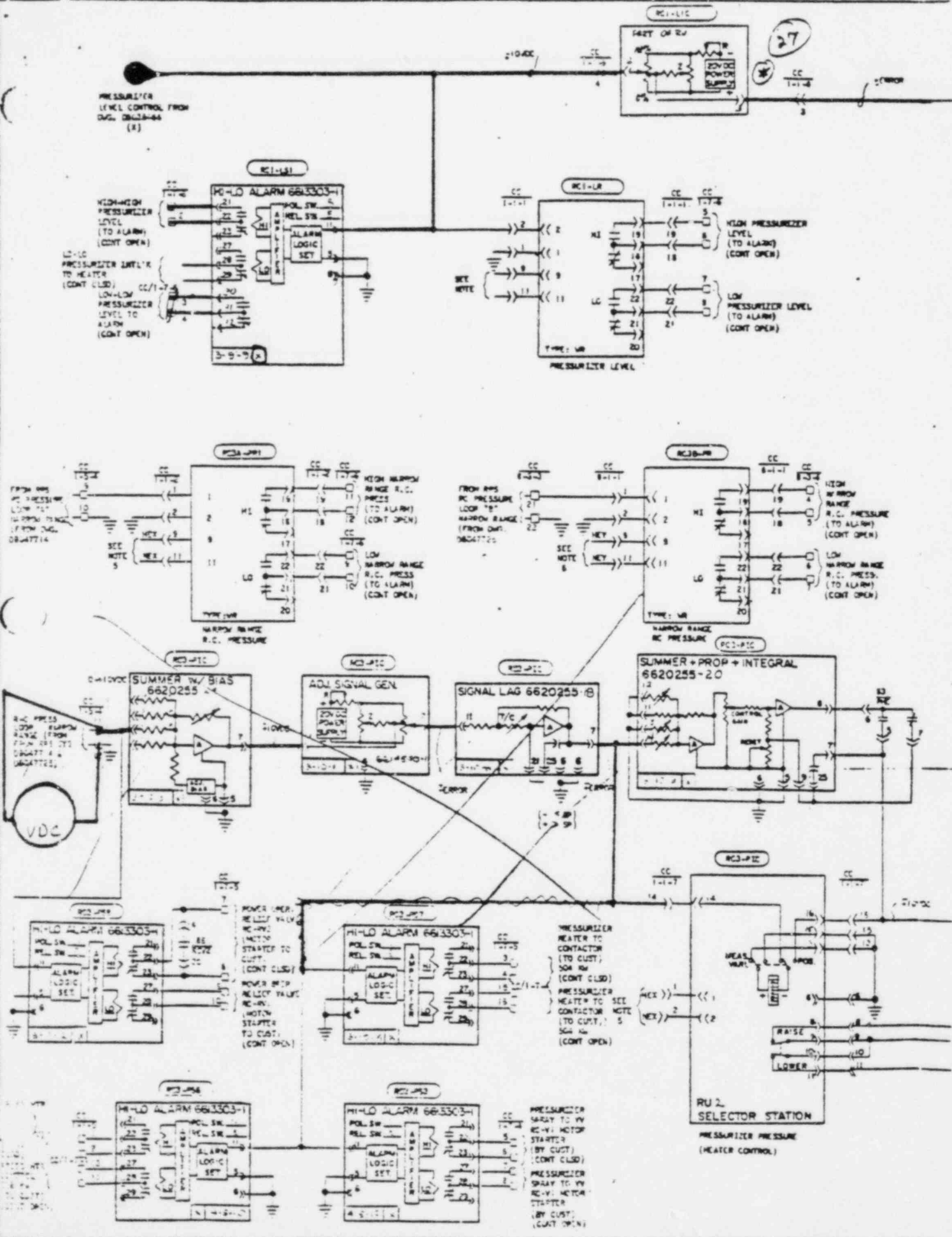
22 1/2" x 17 1/2"



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661540-1	RESISTOR NETWORK	100K
661540-3	ADJ. SIGNAL GEN.	100K
661540-3	ADJ. SIGNAL GEN.	100K
661540-3	ADJ. SIGNAL GEN.	100K
661540-3	ADJ. SIGNAL GEN.	100K
6618210-1	STATIC MULTIPLIER	100K
6620293-1	SUMMER W/BIAS	100K
6615540-1	SUMMER EXTENSION	100K
661540-1	FIXED SIGNAL GEN.	100K



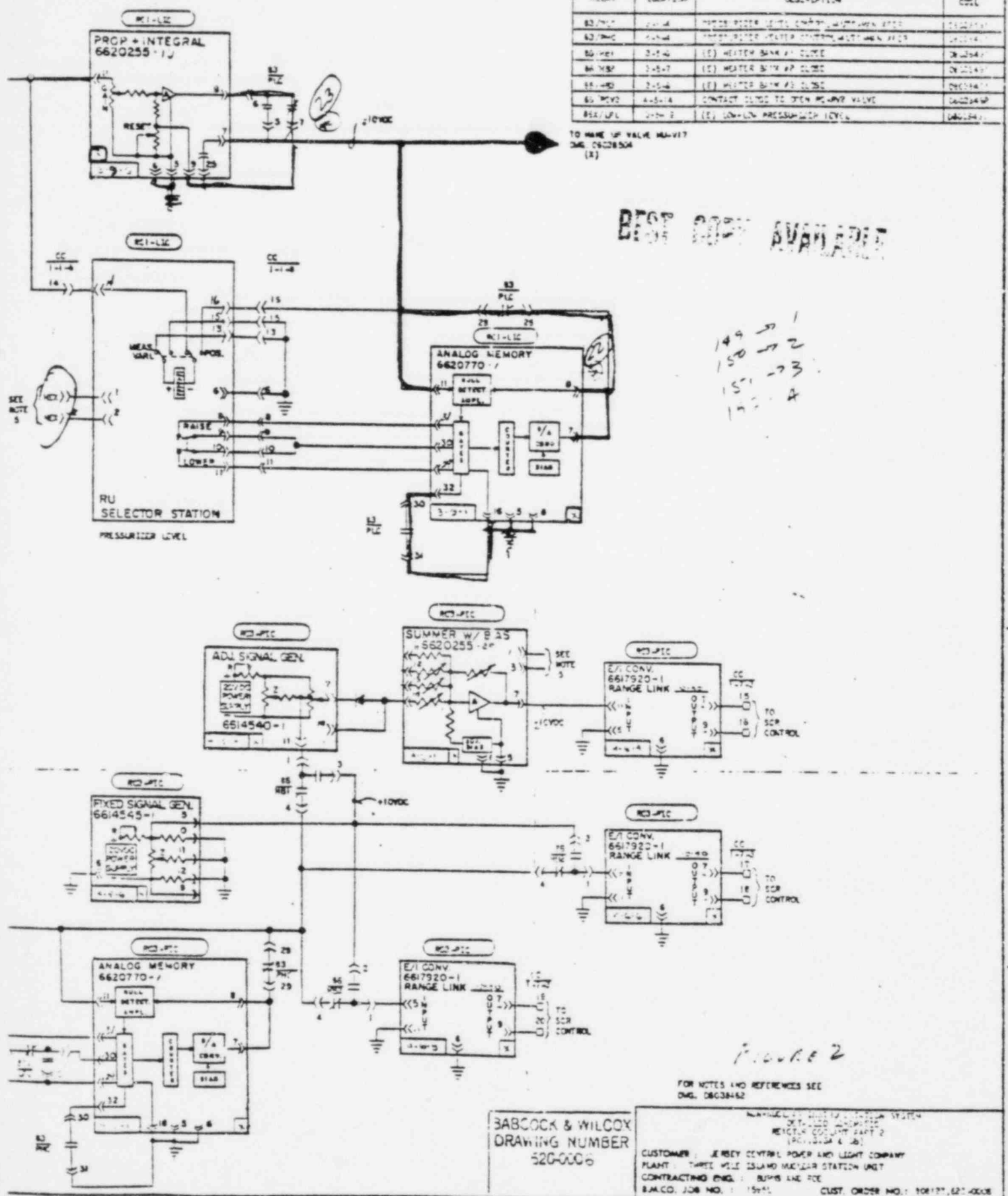


RELAY	LOCATION	DESCRIPTION	COIL
82/701	2-1-4	HEATER BURNER LEVEL CONTROL, MULTIPLE USE	CR-2047
82/702	2-1-4	HEATER BURNER WATER CONTROL, MULTIPLE USE	CR-2047
82/703	2-1-4	(E) HEATER BURNER OFF	CR-2047
82/704	2-1-4	(E) HEATER BURNER OFF	CR-2047
82/705	2-1-4	(E) HEATER BURNER OFF	CR-2047
82/706	2-1-4	CONTACT CLOSED TO OPEN PUMP VALVE	CR-2047
82/707	2-1-4	(E) LOW-LIN PRESSURE HIGH LEVEL	CR-2047

TO MAKE UP VALVE MA-117
DML 08028504
(1)

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149 → 1
150 → 2
151 → 3
152 → 4



FOR NOTES AND REFERENCES SEE
DML 08038462

FIGURE 2

BAIRCOCK & WILCOX
DRAWING NUMBER
520-0006

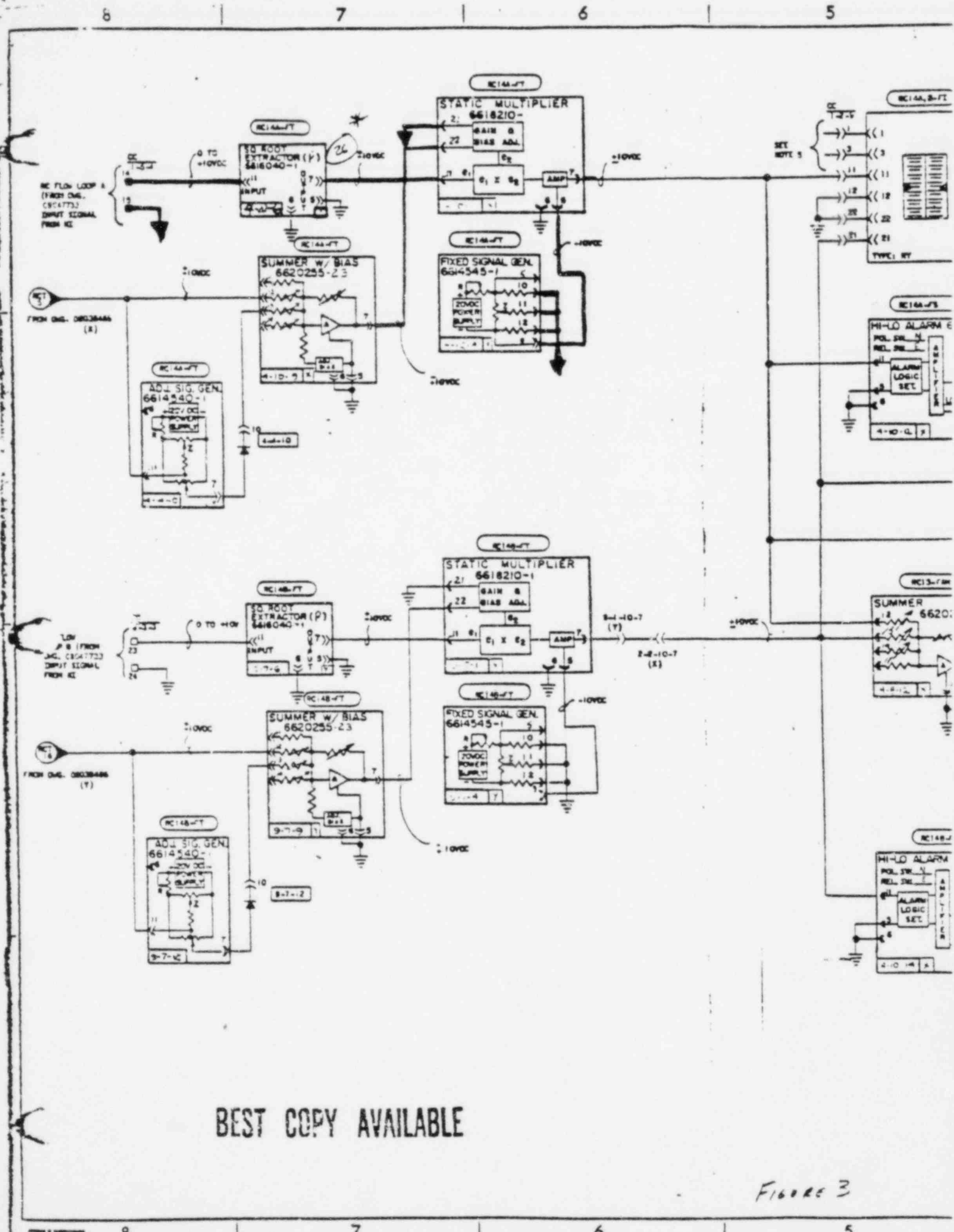
NATIONALLY DISTRIBUTION SYSTEM
DET. REG. NO. 1000000
REGISTERED ACCOUNT PART 2
(REG. 1000000 & 1000000)

CUSTOMER: JERSEY CENTRAL POWER AND LIGHT COMPANY
PLANT: THREE MILE ISLAND NUCLEAR STATION UNIT
CONTRACTING ENG.: BURNS AND ROE
B.M.C.O. JOB NO.: 1541 CUST. ORDER NO.: 101177-621-0006

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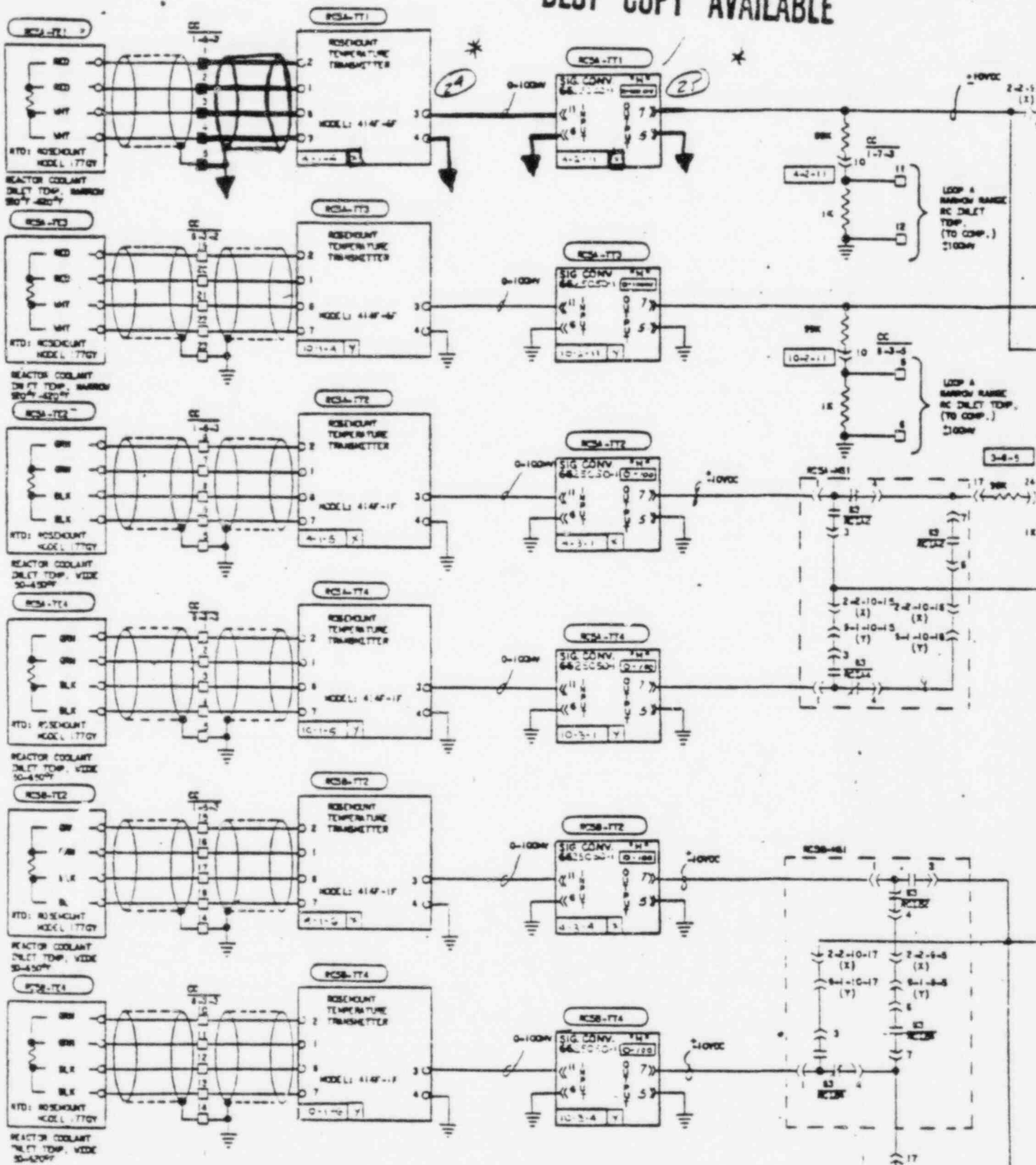
D9085486



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Figure 3

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RELAY	LOCATION	DESCRIPTION	COIL DWG.	RELAY	LOCATION	DESCRIPTION	COIL DWG.
21/21A2	3-4-10	REACTOR INLET TEMP WIDE RANGE-LOOP A	DB038491	82/82B2	2-5-11	REACTOR INLET TEMP WIDE RANGE-LOOP B	DB038492
22/22A	3-4-5	REACTOR INLET TEMP WIDE RANGE-LOOP B	DB038491	83/83A	2-4-7	REACTOR INLET TEMP WIDE RANGE-LOOP B	DB038492
23/23A1	3-5-6	REACTOR INLET TEMP NARROW RANGE-LOOP A	DB038491	83/83A	1-4-2	REACTOR INLET TEMP NARROW RANGE-LOOP B	DB038491
24/24A2	3-4-4	REACTOR INLET TEMP NARROW RANGE-LOOP A	DB038491				

FIGURE 4

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
 set forth in AP 1002 and
 Met Ed Safety M

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13. Post Maintenance Testing required and Acceptance Criteria.

filter ΔP at proper level.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: RC Stoutman Date 8-10-77

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed — Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature

Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

EC2

WORK REQUEST APPROVAL
TMI Nuclear Station

See 60689
Cancel

Unit No. 7

Work Request No. 21000

Work Request Procedure (A.P. 1016 Sect. 6.0) T23
should be used as a guide in filling out this form.

Priority 1/a

W.O./Account No. T803/530.5 NPRD Form Req'd. No

Utility

Items 1 through 5 completed by originator

1. System: Air Handling

2. Component (name & number) AH-F4B

3. Describe malfunction or modification and recommended corrective action.
"B" control Bldg fan filter unit
DP 2.4
filters need changing

4. Originator: RE Boyer Date/Time: 8-10-77 0315

5. Originator's Supervisor's Signature L. Now/G. Kender

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes ___ No

7. a. Does the work require a Radiation Work Permit? Yes ___ No
b. Is an approved procedure required to minimize personnel exposure? Yes ___ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work.
Yes ___ No

9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes ___ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

JOB TICKET # 21674 PAPERWORK

HAS BEEN MISPLACED.

THE JOB HAS BEEN: (Circle Applicable No.)

1. CANCELLED ON 10/20/77
(Date)

Duplicate of
23297

2. COMPLETED ON _____
(Date)

APPROVED BY:

(Supervisor of Maintenance)

See 06,89

1026
Revision 0
07/22/77

Cancel
6/21/79

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1234
W.O./Account No. TR003/5305

NPRD Form Req'd No

Work Request No. 22064
Priority 2A

U

Items 1 through 5 completed by originator

1. System: CONTROL BLDG. VENT. 5TH FLOOR

2. Component (name & number) AH-F-4B

3. Describe malfunction and cause of malfunction (if known) or modification desired.
FILTER DP AT 2.6 LIMIT 2.5 FILTER'S
NEED CHANGED

1440-F-1
Rev. 0
5/15/74

4. Originator: MR Snyder Date/Time: 30 APR -77 1435

5. Originator's Supervisor's Signature Book

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes,
PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it
has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
Operator 31.0

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cc1

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

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- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *7 hrs replaced* E IC M U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

See Col 689

WORK REQUEST APPROVAL
TMI Nuclear Station

cancel

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20139
Priority 2A
util

W.O./Account No. T8003/530.5 NPRD Form Req'd. No

4900 1238

Items 1 through 5 completed by originator

1. System: CONTROL TOWER VENTILATION

2. Component (name & number) FILTER AH-F-4A

3. Describe malfunction or modification and recommended corrective action.

FILTER NEEDS CHANGED. DP > 2.5"

4. Originator: J. E. Bush Date/Time: 5/25/77 0430

5. Originator's Supervisor's Signature Boob/Kinder

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes _____ No

7. a. Does the work require a Radiation Work Permit? Yes _____ No
b. Is an approved procedure required to minimize personnel exposure? Yes _____ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work.
Yes No _____

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes _____ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown

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CC1

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

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13. Post Maintenance Testing required and Acceptance Criteria.

I A W procedure

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

002

WORK REQUEST APPROVAL
TMI Nuclear Station

See 0689
cancel

Unit No. #1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20673
Priority 2A

W.O./Account No. 18003/530.5 NRPD Form Req'd. No

Utility

Items 1 through 5 completed by originator

1. System: AIR HANDLING

2. Component (name & number) CONTROL BLOC. FANS FILTERS AH-F-4A

3. Describe malfunction or modification and recommended corrective action.
THERE IS A HIGH ΔP ON THE AH-F-4A, PLEASE CHANGE THIS FILTER

4. Originator: D.T. CALMAN Date/Time: JULY 13, 1977 1030

5. Originator's Supervisor's Signature Bob Kende

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes ___ No

7. a. Does the work require a Radiation Work Permit? Yes ___ No
b. Is an approved procedure required to minimize personnel exposure? Yes ___ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes ___ No

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes ___ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shut down

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

filter changed AP as designed

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *RC Troutman* Date *1-14-77*

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required. Tagging Application No. _____ Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature
Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

Cancel Duplicate

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No.
W.O./Account No. T2003/5305 NPRD Form Req'd No

Work Request No. 21534
Priority 2A

Items 1 through 5 completed by originator

Utility

1. System: Air Handling

2. Component (name & number) AH-F 4B

3. Describe malfunction and cause of malfunction (if known) or modification desired.

CHANGE FILTERS

4. Originator: Dennis Olson Date/Time: 10-4-77

5. Originator's Supervisor's Signature Bob/Kudr

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

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11. Plant status or prerequisite conditions required for work.

operating

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: filters replaced E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor MA Date _____

17. Supervisor of Maintenance approval to commence work: AC Troutman Date 10-5-77

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman: _____
Tagging Application No. _____ Radiation Work Permit No. _____
signature is not required

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____
Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____
Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____
Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Supervisors Report No. 1728 QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: filter changed E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: RC Troutman Date 11-21-77

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

See C0689
cancel
1026
Revision 0
07/22/77

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. _____
W.O./Account No. TR003/530.5 NPRD Form Req'd No

Work Request No. 21982
Priority 1/A
Utility

Items 1 through 5 completed by originator

1. System: As - Utility

2. Component (name & number) A-5-A

3. Describe malfunction and cause of malfunction (if known) or modification desired.
From the A-5-DB Section H₂

4. Originator: _____ Date/Time: 11

5. Originator's Supervisor's Signature L. N. / G. K. [unclear]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
Operating
31.0

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12. Limits and Precautions:

a) Personnel

b) Equipment

c) Environment

d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman signature is not required. _____

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

BEST COPY AVAILABLE

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

JUL 11 1980

CC2

See C0689
cancel

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1

Work Request No. 20070

Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Priority 11A

W.O./Account No. T8003/5305 NPRD Form Req'd. No

util

Items 1 through 5 completed by originator

1. System: Air Handling Control bldg.

2. Component (name & number) AHF4A Reaching filter 5th floor

3. Describe malfunction or modification and recommended corrective action.

ΔP 2.5" needs filter change

4. Originator: RC Bryan Date/Time: 5-22-77 1730

5. Originator's Supervisor's Signature L. N. H. / G. K. Under

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No

7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No

9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown

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001

WORK REQUEST APPROVAL
TMI Nuclear Station

See C0689

Cancel

Unit No. 1

Work Request No. 20545

Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Priority 11a

W.O./Account No. T8003/530.5 NPRD Form Req'd. No

Utility

Items 1 through 5 completed by originator

1. System: Air Handling Control Bldg

2. Component (name & number) A H F - 4A

3. Describe malfunction or modification and recommended corrective action.

D.P. ~~2.6~~ > 2.6"
Filters need to be change
control Bldg. 5th floor

4. Originator: RC Boye Date/Time: 7-2-77 0230

5. Originator's Supervisor's Signature L. Noll / G. K. Under

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes _____ No
- 7. a. Does the work require a Radiation Work Permit? Yes _____ No
b. Is an approved procedure required to minimize personnel exposure? Yes _____ No
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
- 9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes _____ No
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

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AP 1016

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

filter changed as required

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *R C Troutman* Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

22.11.11 12:18

002

See C0689

Cancel

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20254
Priority 11A
util

W.O./Account No. T8003/530.3 NPRD Form Req'd. NO

Items 1 through 5 completed by originator

- 1. System: AIR HANDLING
- 2. Component (name & number) AH-F 4A
- 3. Describe malfunction or modification and recommended corrective action.
DP across filter high > 2.5 "H₂O

4. Originator: Swerton Date/Time: 6-3-77 2000

5. Originator's Supervisor's Signature Moya for GPK

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
- 7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
- 9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

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801

AP 1016

12. Limits and Precautions:

a) Personnel

b) Equipment

c) Environment

d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

General notes 10 + 12 of GP 1008 apply

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13. Post Maintenance Testing required and Acceptance Criteria.

AP within limits

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *W. Metzger* Date *6-6-77*

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman signature is not required. _____

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

31241111 1980

PLANT IDENTIFICATION				LOCATION / UNIT		JOB TYPE		JOB TICKET NUMBER		REQUEST DATE			RECOMMENDED PRIORITY		
SYS	718	COMP TYPE	1112	CD/PR	151517	22	22	24	25	28	31	23	31	27	79
AH	F			00048	035001	CM		00639	03	1	2	7	9		

FILTERS OUT OF POSITION AND LEAVING ON TV
 FF FLO OR REPAIR AND OR REPAIR FILTERS
 STK FV 600 CONTROL STATION
 FILTERS DIRTY

ORIGINATOR'S EMP. NO. 04716	ORIGINATOR'S SIGNATURE <i>L. N. Bush</i>	DATE 3-12-79	SUPERVISOR'S EMP. NO. 03150	SUPERVISOR'S SIGNATURE <i>D. S. Curtis</i>	DATE 3-12-79
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WORK ORDER NUMBER 035000187	GC CODE FC	ACCOUNT NUMBER 5305	PLANT CONDITION SU DP HO CO RE HG LR	WFRD FAILURE YR MO DAY HR MIN	START HR MIN
STATUS HOLD CODE	ESTIMATED DOLLARS 250				

S/M APPROVAL COMMENCE WORK MO DAY YR	S/F APPROVAL COMMENCE WORK MO DAY YR	PROCEDURE NUMBER 062277	RESP LOCATION OR CONTRACTOR 2035V	EST CREW SIZE 03	EST MANHOURS 000060
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ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS	ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS	ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS
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JOB COMPLETION DATE MO DAY YR 07/679	FIELD WORK COMPLETION DATE MO DAY YR 062279	SIGN OFF REASON CODE 5753	TOTAL ACTUAL MANHOURS 5159	PURCHASE REQUISITION NUMBER 05107	PURCHASE ORDER NUMBER 05107	MATERIAL ORDER NUMBER 05107
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33 RESOLUTION DESCRIPTION
 0770W FILTERS LOST TO CORRECT PROBLEM
 08
 09
 10

WFRD FAILURE END YR MO DAY HR MIN 79 03 12 00 00	FAILURE NO. 48	FAILURE STATUS 49	ORIGINATOR — SUPERVISOR — SUPERVISOR OF MAINTENANCE — MAINTENANCE FOREMAN — JOB PERFORMER — MAINTENANCE FOREMAN — SUPERVISOR OF MAINTENANCE — CM COORDINATOR - DATA ENTRY - SUPERVISOR OF MAINTENANCE CM COORDINATOR - DATA ENTRY
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WFRD FAILURE TYPE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	CAUSE OF FAILURE CODES A B	EFFECT OF FAILURE CODES A B	ACTION TAKEN CODES A B	INCIDENT EVENT REPORTED DATE YR MO DAY
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Quality Control

ACCEPT

Purchase Order 18826

Item No. 1072

NOV 28 1975

JOB TICKET (WORK REQUEST)
REVIEW - CLASSIFICATION - ROUTING CONTROL FORM

JOB TICKET (WORK REQUEST) NUMBER 0659

12. Retest met acceptance criteria

Yes No

13. Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

06-22-79 1200 hours
Date

CF Wickham

14. Work completed and component aligned for testing.

CF

Initial if S. F. signature is not required.

Shift Foreman's Signature

Date

15. Testing completed and component released for normal use.

CF

Initial if S. F. signature is not required.

Shift Foreman's Signature

Date

16. Quality Control Department review of work and testing completed (QC work only).

W/11
Surveillance Report No.

025. Edwards
QC Department

7/5/79
Date

17. Supervisor of Maintenance Job Ticket (Work Request) and procedure are complete and signed off as required. Change/modification form has been signed off as required.

R. [Signature]
Supervisor of Maintenance Signature

7/11/79
Date

12. Supervisor of Maintenance approved to commence work At [Signature] on 9-29-77
13. Shift Foreman's approval to start/stop work _____

Initial of Shift Foreman

Signature is not required

14. Comments on work performance:

Does work acceptance criteria

Yes No

Work performed by [Signature]

Shift Foreman - Supervisory Foreman's Signature

15. Work's completed and correctly signed

Initial if S.F. signature is not required.

Shift Foreman's Signature

16. Testing completed and acceptance indicated for current work.

Initial if S.F. signature is not required.

Shift Foreman's Signature

17. Quality Control Department review of work and testing completed (QC work only).

Signature of QC Department

QC Department

18. Supervisor of Maintenance has reviewed all work performed on computer and signed off as required. Computer/terminal has been signed off as required. Monthly history entry has been made, if required.

Initial/Signature to perform job

Supervisor of Maintenance Signature

502

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WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. 18003/530.5

NPRD Form Req'd No

Work Request No. 22905
Priority Utility

Items 1 through 5 completed by originator

1. System: Air Handling (2nd Floor Central Bldg Patio)

2. Component (name & number) AHFLA Filter for AHE20A

3. Describe malfunction and cause of malfunction (if known) or modification desired.

High ΔP on Filter - should be replaced per
OFS-5087

4. Originator: REIGLE Date/Time: 2-21-78/2145

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. 1021 Yes No

7a. Does work require an RWP Yes No

7b. Is an approved procedure required to minimize personnel exposure. Yes No

8a. Is work on a QC component as defined in GP 1008. Yes No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work

operations

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria

14. Estimated manhours to perform job: 2 IC 1 M 0 U

fitting charge. AP within manufacturing spec

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: RC Troutman Date 2-22-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
 Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____
 Work Reviewed - Maintenance Foreman's Signature _____
 Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____
 Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____
 Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. T Work Request No. 25149
W.O./Account T8003/1001/530.5 NPRD Form Req'd No Priority 1A
Utility

Items 1 through 5 completed by originator

- 1. System: VENTILATION Sys.
- 2. Component (name & number) AH FUGA
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.

high filter DP MAX 1" H₂O reading 1.35" H₂O
LOCATION : 2ND Floor of CONTROL Tower

4. Originator: [Signature] Date/Time: 9/5/78 2215
5. Originator's Supervisor's Signature: [Signature]

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes No
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

[Signature]
C-10

Unit Superintendent _____ Date _____

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations _____

11. Plant status or prerequisite conditions required for work.
operating or shutdown

BEST COPY AVAILABLE

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

BEST COPY AVAILABLE

- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *Filts changed* E IC M U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8
QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *Actonman* Date *9-6-78*

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. *Copy from Department* review of work and testing completed (QC work only).
Supervisors Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.
Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. ONE
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20332

Priority 2A

W.O./Account No. T8003/520.5 NPRD Form Req'd. No

util

Items 1 through 5 completed by originator

- 1. System: HEATING AND VENTILATION
- 2. Component (name & number) AHF-6B (FILTER FOR AHE-20B, CONTROLLED ACCESS/HOT MACHINE SHOP AREA EXHAUST FAN)
- 3. Describe malfunction or modification and recommended corrective action.
FILTER NEEDS CHANGED.

4. Originator: K.A. Sela Date/Time: June 12, 1977 2130

5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
- 7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No FILTER NON-QC (origin)
- 9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent _____ Date _____

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

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AP 1016

COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1000
AND MET ED SAFETY MANUAL

12. Limits and Precautions:

a) Personnel

b) Equipment

* See General Note 10+12 in GP1008

c) Environment

d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

ΔP is not excessive

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

BEST COPY AVAILABLE

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

31001111

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20974
Priority 11a

W.O./Account No. 1003/6305 NPRD Form Req'd. None
Signature 1003 1003 Utility

Items 1 through 5 completed by originator

1. System: H & V FILTER
2. Component (name & number) AH-F-6B
3. Describe malfunction or modification and recommended corrective action.
HIGH DP

4. Originator: R. Bohmer Date/Time: 8/7/77 2005

5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes ___ No
7. a. Does the work require a Radiation Work Permit? Yes ___ No
b. Is an approved procedure required to minimize personnel exposure? Yes ___ No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes ___ No
9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes ___ No
10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

operating or shutdown BEST COPY AVAILABLE TMI 50 Rev. 10-76
001

AP 1016

12. Limits and Precautions:

a) Personnel

b) Equipment

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

c) Environment

d) Nuclear

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

filter changed

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: *RC Shortman* Date *8-8-77*

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required. Tagging Application No. _____ Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed -- Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature _____
initial not required. Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

If S.F. signature _____
initial not required. Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

002

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. ONE
W.O./Account No. 78003/5305

NPRD Form Req'd No

Work Request No. 22043
Priority 2R

Items 1 through 5 completed by originator

- 1. System: HEATING AND VENTILATION
- 2. Component (name & number) AHF-6B (FILTER FOR AH-E-208) CONTROLLED ACCESS - HOT PLANK SHOP AREA EXHAUST FANS.

3. Describe malfunction and cause of malfunction (if known) or modification desired.
 ΔP ACROSS FILTER IS 2.7" H₂O (MAX. ΔP IS 1" H₂O)
 FILTER NEEDS CHANGED

4. Originator: K.A. Dela Date/Time: 11/28/77 1400

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
 If yes, an approved change modification is required per AP 1021.
 C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes No _____
- 7b. Is an approved procedure required to minimize personal exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008 Yes No _____
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).
 _____ Unit Superintendent _____ Date

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

 Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
Operating 31.0

BEST COPY AVAILABLE

 Date

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

BEST COPY WITH THE PROVISIONS
NEW YORK IN SECTION 1103
END NEW ED SAFETY MANUAL

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E IC M U 8

15. Maintenance Foreman Assigned: KS Kozic

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

BEST COPY AVAILABLE

Initial if Shift Foreman signature is not required
_____ Tagging Application No.

_____ Radiation Work Permit No.

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

_____ Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature _____ Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature _____ Date

22. Quality Control Department review of work and testing completed (QC work only).

7/24/77
_____ Surveillance Report No.

_____ QC Department _____ Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

_____ Actual Manhours to perform job

_____ Supervisor of Maintenance Signature

_____ Date

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20000
Priority 2A
U.T.L

W.O./Account No: 78003 / 330 5738 Form Req'd. No

Items 1 through 5 completed by originator

1. System: Air Handling

2. Component (name & number) Filters AH-F-6A/B

3. Describe malfunction or modification and recommended corrective action.

~~AH-6~~ AH-F-6A Med replaced. Hi SP
AH-F-6B

4. Originator: Book Date/Time: 5/16/77 2100

5. Originator's Supervisor's Signature Book Hunter

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.8) C/M No. _____
Yes No

7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

AP 1016

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature
Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature
initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

002

3. 4A Y903 1235

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. TB003/5305

NPRD Form Req'd No

Work Request No. 23042
Priority 1A
Utility

Items 1 through 5 completed by originator

1. System: Air Handling
2. Component (name & number) AH-F-6A & AH-F-6B

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Both Filters Have H. ΔP filters need cleaned

4. Originator: [Signature] Date/Time: 1530 3-3-78
5. Originator's Supervisor's Signature [Signature] IMJR

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work
Operating

BEST COPY AVAILABLE

BEST COPY AVAILABLE

12. Limits and Precautions:
- a) Personnel Comply with the Provisions
 - b) Equipment set forth in AP 1002 and
 - c) Environment Met Ed Safety Manual
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.
14. *Filters changed* AP per manufacturer notes
Estimated manhours to perform job: 5 IC M U 40

15. Maintenance Foreman Assigned: K S Kline

16. QC Dept. review, if required in item No. 8
QC Supervisor _____ Date 3-

17. Supervisor of Maintenance approval to commence work: RC Trottman Date 3-6-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:
Filters Changed as Requested

Retest met acceptance criteria Yes No

Work Performed by date/time _____
Date 3-10-78
Work Reviewed - Maintenance Foreman's Signature K S Kline

20. Work completed and component aligned for testing.
 Initial if S.F. signature is not required.
Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.
 Initial if S.F. signature is not required.
Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).
Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.
36 Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20183
Priority 11A
util

W.O./Account No. Trade 15305 NPRD 1016 Req'd. util

Items 1 through 5 completed by originator

1. System: Air Handling
2. Component (name & number) AHE-20A - AH-F-10A
3. Describe malfunction or modification and recommended corrective action.

control Bldg 2nd floor ΔP = 2.5''
change filters

4. Originator: RE Boye Date/Time: 5-29-77 0600
5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designer

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes ___ No
7. a. Does the work require a Radiation Work Permit? Yes ___ No
b. Is an approved procedure required to minimize personnel exposure? Yes ___ No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No ___
9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes ___ No
10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

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AP 1016

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman signature is not required. _____

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature Initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

If S.F. signature initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

312A111NA Y980 T23

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1114
W.O./Account No. 12003/530.5 NPRD Form Req'd N

Work Request No. 21587
Priority 11A
~~util~~

Items 1 through 5 completed by originator

1. System: Air Handling

2. Component (name & number) AHE-20A

3. Describe malfunction and cause of malfunction (if known) or modification desired.

Δ P 2.7" filters need to be changed
2nd floor control Bldg. by G, L 480 Bus.

4. Originator: RE Boye Date/Time: 10-7-77 2200

5. Originator's Supervisor's Signature L. Wall / G. Kunder

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. 15 Yes No

7a. Does work require an RWP Yes No

7b. Is an approved procedure required to minimize personnel exposure. Yes No

8a. Is work on a QC component as defined in GP 1008. Yes No RC.T

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
31.0

operating

BEST COPY AVAILABLE

Cancel Request 79 3
See W.R. 0516

WORK REQUEST APPROVAL
TMI Nuclear Station

24972

Unit No. F
W.O./Account TS003/1001 1530.8
NPRD Form Req'd No
Work Request No. 24972 345
Priority 1A
M

Items 1 through 5 completed by originator

1. System: Main STEAM

2. Component (name & number) MS-V1048 Root Valve to SP-6APT2

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Value Body to Bonet leak (STEAM Gun outlet press A-2)
located inside Rx Bldg. on 328 ft. on grating above
personal door.

4. Originator: D.R. DEITER Date/Time: 8/18/78 0700

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

10a. Is the system on the Environmental Impact list in AP 1026
Unit Superintendent _____ Date _____
Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

11. Plant status or prerequisite conditions required for work.
Unit Superintendent/Supervisor of Operations _____ Date _____

shutdown

BEST COPY AVAILABLE

COMPLY WITH THE PROVISIONS
SET FORTH IN AF1002, 1003
AND MET ED SAFETY MANUAL

- 12. Limits and Precautions.
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman

Tagging Application No. _____

Radiation Work Permit No. _____

signature is not required

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

Cancel Cancel under WR 24972

WORK REQUEST APPROVAL
TMI Nuclear Station

Outage Item

Unit No. I
W.O./Account T 9003/1000/500? NPRD Form Req'd No Work Request No. 25170
Priority X II 20
M

Items 1 through 5 completed by originator

1. System: main Steam

2. Component (name & number) MS-V-1048

3. Describe malfunction and cause of malfunction (if known) or modification desired.
bad packing leak in R* Bldg
MS-V1048 per Root JLV
for PS 600/PS 602
SP-6A PT2

OUTAGE ITEM

4. Originator: D.A. Trump Date/Time: 9/7/78 1130

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

shutdown

BEST COPY AVAILABLE
TMI-93 2-78

To
C. J. J.
changed 5/12/74

Quality Control

ACCEPT

Purchase Order 43506

Item No. 101

R.C. Inspector [Signature]

Date 5/21/74

Cartridge Filters

Tag Mill-F1A/B

Tag Mill-F2A/B

SES C1077034 35 004

Makeup & Purification Sys E-10 RB-4

46408

100-6369

Item 1



5-6-77

Quality Control

ACCEPT

Purchase Order 43506

Item No. 1

Q.C. Inspector [Signature] Date 5/21/74

5-6-77

Quality Control

ACCEPT

Purchase Order 43506

Item No. 1

Q.C. Inspector [Signature] Date 5/21/74

5/13/77
Filter
MU-F-1B

Quality Control

ACCEPT

Purchase Order 43506

Item No. 1

Q.C. Inspector [Signature] Date 5/21/74

PS 83) 431-6970-1
Item 1812 N121

Changed IR 9-28-77
Quality Control

ACCEPT

Purchase Order 43506

Item No. 1

Q.C. Inspector [Signature]

Date 5/21/74

ACCEPT

Purchase Order 46170
Item No. 1
B.C. Inspector [Signature] Date 5/1/74

Purchase Order 43506
Item No. 1
B.C. Inspector [Signature]

ACCEPT

Quality Control

Quality Control

ACCEPT

Purchase Order 43506
Item No. 1
B.C. Inspector [Signature] Date 5/21/74

Date 5/21/74

MW-518
DATE CHANGED 1-14-77

Quality Control

ACCEPT

Purchase Order 43506
Item No. 1
B.C. Inspector [Signature] Date 5/21/74

APPLICATION FOR APPARATUS TO BE TAKEN OUT OF SERVICE

DATE 5-8-77

UNIT NO. 1

CONTROL NO. 608

APPARATUS DESIRED M.U.F-1A

FROM 500 ^{AM DAY} SUN. ^{PM DATE} 5-8 1977 UNTIL COMP

^{AM DAY} _____ ^{PM DATE} _____ 19____

WORK REQUEST NO. 15349 PERSON INITIATING APPLICATION H. Deitz

WORK TO BE DONE Change Filter

EQUIPMENT/PERSONNEL HAZARDS Radiation + Contaminated Water

SWITCHES/VALVES NECESSARY Blue Tag closed E-1 Control For M.U.V-11A
Close + Blue tag M.U.V-55A + M.U.V-57A.
Open + Blue tag M.U.V-56A.

Open M.U.V-55A while Draining then close

RADIATION WORK PERMIT REQUIRED YES X NO _____

ALL OF ABOVE FORM TO BE COMPLETED BY TAG REQUESTOR

ABOVE TAGGING APPROVAL: APPROVED Booth DEPT. FOREMAN

APPROVED Booth SHIFT FOREMAN

SIGNED _____ CONTROL ROOM OPERATOR

GO TO REVERSE SIDE OF THIS PAGE FOR "CLEARANCE CONTROL".

APPROVAL FOR OPERATION

DATE

TIME

SHIFT FOREMAN

010

DATE 5-1-77

UNIT NO. I

CONTROL NO. 605

APPARATUS DESIRED CHARGE FILTER

FROM 7:15 AM DAY 1-11-77
PM DATE 5-1-77

UNITL Completed AM DAY _____
PM DATE _____ 19__

WORK REQUEST NO. _____

PERSON INITIATING APPLICATION DIPPER

WORK TO BE DONE CHARGE FILTER

EQUIPMENT/PERSONNEL HAZARDS RADIATION & CONTAMINATED WATER

SWITCHES/VALVES NECESSARY BLUE TAG CLOSED AT GAIT FOR MOVING

CLOSE GAD BLUE TAG MIV 55B + 57B

Close
242 BLUE TAG MIV 56B

* (CHECK MIV 55B WHEN DEBRIDING THEM) CLOSE

RADIATION WORK PERMIT REQUIRED: YES X NO _____

ALL OF ABOVE FORM TO BE COMPLETED BY TAG REQUESTOR

ABOVE TAGGING APPROVAL: APPROVED [Signature] DEPT. FOREMAN

APPROVED [Signature] SHIFT FOREMAN

SIGNED _____ CONTROL ROOM OPERATOR

GO TO REVERSE SIDE OF THIS PAGE FOR "CLEARANCE CONTROL".

APPROVAL FOR OPERATION

DATE

TIME

SHIFT FOREMAN

009

5/7/77

RRP
11627

Tracy
599

ST

THREE MILE ISLAND STATION

DATE 5-11-76 NO 45

APPARATUS DESIRED 1A

FROM PM DATE 5-11 1976 UNTIL AM DATE 5-11 1976

WORK TO BE DONE 1A

SWITCHES VALVES NECESSARY Close MU-V-55A
MU-V-51A
MU-V-51A
MU-V-51A

* Note: After Operation Dept Isolates, Vent & Drain
the Filter. Ensure vent valve MU-V-55A is Closed.

RADIATION WORK PERMIT REQUIRED 838 YES NO

TAGS TO BE PLACE FOR 2 SIGNED BY [Signature] (APPLICANT)

ALL OF ABOVE FORM TO BE COMPLETED BY APPLICANT

ABOVE TAGGING APPROVED
SIGNED _____ APPROVED [Signature] DEPT. FOREMAN
(SWITCHBOARD OPERATOR) (CONTROL ROOM OPERATOR) [Signature] SHIFT FOREMAN

CLEARANCE GIVEN BY	DATE	TIME	AM PM	GROUND APPLIED
REPORTED CLEAR BY	DATE	TIME	AM PM	GROUNDS REMOVED
APPROVED FOR OPERATION	DATE	TIME	AM PM	SHIFT FOREMAN SIGNATURE

(1) 1 1/2 ton Compressor

(2) 3 ton beam clamps

(3) 1" shackles

(1) 3/8" Allen wrench

hand held inspection mirror
and tool.

- 6.9 Remove Lead Pig ~~to 20 ft level~~ AND PLACE ON
DOLLY. H.P. SUPERVISOR WILL DESIGNATE APPROPRIATE
STORAGE AREA AND POST NECESSARY RADIATION
SIGNS.
- 6.10 ON Lower "O" RING OF NEW FILTER CARTRIDGE
PLACE A LIGHT COAT OF DOW CORNING 200 LUBRICANT
- 6.11 USING HOOK TOOL LOWER NEW FILTER CARTRIDGE
INTO FILTER HOUSING
- 6.12 PUSH DOWN ON TOP OF CARTRIDGE WITH A FORCE
OF APPROXIMATELY 30 LBS TO SEAT "O" RING IN
- 6.13 WITHDRAW HOOK TOOL FROM CARTRIDGE AND USE IT
TO SWING LID INTO PLACE
- 6.14 SWING ^{LID} ~~hook~~ BOLTS INTO POSITION
- 6.15 SNUG UP ^{LID} ~~hook~~ BOLTS AND REMOVE LONG HANDLE
WRENCH
- 6.16 TRY LINE UP ~~the~~ FILTER FOR SERVICE AND
CHECK FOR LEAKS REPAIR STEP ^{6.15} ~~6.15~~ IF NECESSARY

1 ISOLATE FILTER AND INSURE IT IS VENTED AND DRAINED
CAUTION: INSURE VENT VALVES REMAIN CLOSED ONCE
FILTER COVER IS REMOVED

2 MOVE LEAD PIG INTO POSITION TO BE HOISTED
make vent valves - drain valves and closed
continuously and ensure that lead valve is

3 ATTACH LIFTING DEVICE TO HOIST, ~~PARALLEL TO~~ AND
~~SET ON LANDING~~ AND PREPARE TO SET IN PLACE

4 USING LONG HANDLE WRENCH LOOSEN TOP COVER
BOLTS. INSURE THIS STEP IS DONE WITH SPOT
LIGHT SHINING ON FILTER AND A MIRROR IN
POSITION

5 SWING BOLTS CLEAR OF FILTER TOP AND SWING
OPEN FILTER TOP. H.P. SURVEY WORK AREA.
CONTINUOUS H.P. COVERAGE REQUIRED FROM THIS
STEP UNTIL COMPLETION OF PROCEDURE.

6 PLACE LEAD PIG IN PLACE OVER ACCESS HATCH.
IF NECESSARY USE STEEL BLOCKS TO LEVEL PIG.
REMOVE LID FROM PIG

7 SLIDE OUT FLOOR OF PIG. INSERT HOOK TOOL
THROUGH PIG AND WITH DRAW FILTER INTO PIG.

No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.

Filter Elements Replacement (MUF 1A/B)

2. Purpose

Replace filter element in MUF 1A/B

3. Description of system or component to be worked on

Make up & purification

4. References

- 4.1 TME Unit #1 AP 1002
- 4.2 TME Unit #1 AP 1003

5. Special Tools, Materials and Qualifications required

- 5.1 Long handled tools, mirror on stand, Extension cord & light, Shipping crate

6. Detailed Procedure (attach additional pages as required)

- 6.1 Comply with ref. 4.1 and 4.2
see attached procedure

Supervisor of Maintenance recommends approval B. M. Jankin Date 5-11-76

*PORC Recommends approval & Chairman C. P. Hartman Date 5-11-76

*Unit Station Superintendent Approval J. J. Cady Date 5-11-76

*NOTE These approvals required only on Nuclear Safety Related Radiation work permit jobs

004

FORM 57 REV. 4-75

- 12. Units and Recipients
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

COMPLY WITH THE PROVISIONS
 AS APPLICABLE TO THIS WORK
 AND THE SAFETY MANUAL

13. Post Maintenance Testing required and Acceptance Criteria:

*DIP < 25** Record initial DIP when filters placed in service

14. Estimated manhours to perform job: E _____ IC _____ M 8 U _____

15. Maintenance Foreman Assigned: W. Draker

16. QC Dept. review, if required in item No. 8 Chas. J. Kelly & Pat Date 5/11/76

17. Supervisor of Maintenance approval to commence work: Pat Date 5/11/76

18. Shift Foreman's approval to commence work: D. Batty Date 5/11/76

605+608
 Testing Application No.

011622
 Radiation Work Permit No.

19. Maintenance Foreman's comments on work performed: *FM-77 changed 13 filters 27 AM. Holdings to ensure all filters from pig. Had trouble installing unit valve.*

Filter changed AP < 5 PSI

500 14/8/76 change 10 filters

Filters can now be changed with approved standing pass. 1410-F3

D. H. Long

5-9-76
 Date/Time

Work Completed - Maintenance Foreman's Signature

20. Work completed and component signed for testing

[Signature]
 Shift Foreman's Signature

5/9/76
 Date

21. Testing completed and component released for normal use

[Signature]
 Shift Foreman's Signature

2-2-78
 Date

22. Quality Control Department review of work and testing completed (QC work only)

[Signature]
 QC Department

2-2-78
 Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

[Signature]
 Supervisor of Maintenance Signature

2-15-78
 Date

Actual Manhours to perform job

003

WORK REQUEST APPROVAL
T.M. Nuclear Station

Work Request No. 15749
Priority 1-5

Do not use as a guide in filling out this form

W.O. Account No. TSC 3/3301 NPRD Form Req'd no

Items 1 through 5 completed by originator

1. System MIXER OF SYSTEM

2. Component (name & number) 1-1000 FILTER UNIT A/B

3. Describe malfunction or modification and recommended corrective action.

MIXER IN OPER. - NO CHANGE NEEDED TO HIGH AP.

4. Originator [Signature] Date/Time 5/1/80

5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C.M. No. _____
Yes ___ No

7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure.
Yes No ___

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10, also Quality Control Dept. must review the work request prior to commencement of work.
Yes No ___

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes ___ No

10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

[Signature]
Line Station Superintendent

Date

11. Plant status or Pre-requisite conditions required for performance of work.

1 plant on a Skatdown

002

1-10-80 Rev. 6-75

- 6.2.4 Remake in accordance with manufacturer's instructions (attached).
Tighten until match marks line up, then tighten a slight
additional amount. An approved thread lubricant may be used
if desired.
- 6.3 Replacing Tubing and/or Fittings
- 6.3.1 Remove old tubing and fittings as specified in the work request.
- 6.3.2 New tubing shall meet the requirements of GAI Line Spec C-1.
The routing of the new tubing shall be identical to that of
the old. Insure that bends are smooth with no kinks.
- 6.3.3 Make up new fittings in accordance with manufacturer's instructions
(attached). Insure fittings are properly aligned before
making up.
- 6.4 Acceptance Criteria
- 6.4.1 Gas Systems: Apply "SNOOP" solution and watch for bubbles.
There shall be no bubbles over a five minute period with the
system at operating pressure.
- 6.4.2 Fluid Systems: There shall be no visible leakage after a five
minute period with the system at operating pressure.

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6.0 PROCEDURE

NOTE: For systems containing radioactive gases or liquids insure an RWP is initiated.

6.1 Tightening of Tubing Fittings

6.1.1 Use two wrenches - one to hold the fitting body steady, the second to tighten the nut.

6.1.2 Do not tighten fitting any more than necessary to stop the leak.

CAUTION: Do not attempt to tighten leaking tubing fittings in any of the following situations without the specific approval of the Supervisor of Maintenance.

- a. System pressure greater than 200 PSIG.
- b. System temperature greater than 150°F.
- c. System carries corrosive fluids.

6.2 Disassemble and Remake Existing Tubing Fittings

6.2.1 Match mark fitting body and nut.

6.2.2 Disassemble using care not to lose any parts.

6.2.3 Inspect fitting.

- a. Insure all pieces are present (refer to manufacturer's instructions attached).
- b. Insure there is no damage to any component including the tubing itself.
- c. Insure there is not excessive cold spring in tubing.
- d. Replace parts as necessary. Replacement parts must be identical to the original.

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

CONTROLLED COPY

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 3 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

1410-Y-4
Tightening and/or Replacing Tubing and Fittings

2. Purpose:

To replace or tighten fittings and tubing on QC/Nuclear safety related equipment or systems.

3. Description of system or component to be worked on.

As per work request.

4. References:

4.1 Parker Catalog
4.2 Swagelok Catalog
4.3 GAI Line Spec. C-1
4.4 AP 1002
4.5 AP 1003

5. Special Tools, Materials and Qualifications required.

5.1 Hand tools of appropriate size.

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6. Detailed Procedure (attach additional pages as required)

See attached.

Supervisor of Maintenance recommends approval Jim Charles Date 8-27-76

*PORC Recommends approval - Chairman J. P. [Signature] Date 8-30-76

*Unit/Station Superintendent Approval J. G. Coetz Date 9-1-76

*NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

Standing Procedure d.w. Cates Date 10/1/76
QC Supervisor

SAFETY REGULATIONS AND PROVISIONS
REVISED EDITION, 1963
NET CO SAFETY MANUAL

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in NP 1002 and Net CO Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria. per 6.4

14. Estimated manhours to perform job: E _____ IC 2 M _____ U _____

15. Maintenance Foreman Assigned: Wilson

16. QC Dept. review, if required in item No. 8 D. Hardy/1/10 Date 2/1/77

17. Supervisor of Maintenance approval to commence work: R. Hardy/1/10 Date 2/1/77

18. Shift Foreman's approval to commence work D. L. Peltz Date 2/1/77

Initial of Shift Foreman signature is not required. N/A Tagging Application No. (Unissued/blank) Radiation Work Permit No.

19. Maintenance Foreman's comments on work performed: CIP 2LT1 - LO JANT LEAKS TIGHTENED

All Transmitters are checked and no leaks during/after core flood replacing external screw. Block 13 requirements met.

CIP 2LT2 - No Leak
Root Valve inaccessible to check

[Signature] Work Completed - Maintenance Foreman's Signature Date/Time 2/5/78

20. Work completed and component aligned for testing. If S.F. signature Initial not required. _____ Shift Foreman's Signature _____ Date

21. Testing completed and component released for normal use. If S.F. signature Initial not required. _____ Shift Foreman's Signature _____ Date

22. Quality Control Department review of work and testing completed (QC work only). 9/6 Sav. R. Hardy QC Department Date 2/8/78

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required. 3 Actual Manhours to perform job [Signature] Supervisor of Maintenance Signature Date 2/13/78

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 5751
Priority 1A

W.O./Account No. 78003/5306 NPRD Form Req'd. No

4

Items 1 through 5 completed by originator

1. System: Core Flood
2. Component (name & number) CF 2-LT 1+2
3. Describe malfunction or modification and recommended corrective action.

*Check for possible leaks around
valves stems, tubing fittings, etc*

4. Originator: J.P. Gilbert Date/Time: 2/1/77 10 30
5. Originator's Supervisor's Signature R. Hargis

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

operating

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12. Limits and Precautions:
- a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

173050
 Prod 790419
 177529
 10674 - 2

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13. Post Maintenance Testing required and Acceptance Criteria.

Pump stroke is properly set and injects properly

14. Estimated manhours to perform job: E _____ IC 4 M _____ U _____

15. Maintenance Foreman Assigned: T. J. ...

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: E. Meyer Date 11-30-76

18. Shift Foreman's approval to commence work Book Date 12/1/76

Initial of Shift _____ Tagging Application No. _____ Radiation Work Permit No. _____
 Foreman signature is not required.

19. Maintenance Foreman's comments on work performed:

Pumps are working properly. Loop needs tuning in auto, Tuned. Conductivity recorder OK.

REPLACED CONTROLLER DO NOT CORRECT PUT CONTROLLER IN MANUAL CONTROLS BETTER THIS WAY. SW. STROKED FOR ACID & AMMONIA.
C. Hopper _____ Date/Time 2/5/78

20. Work completed and component aligned for testing.

If S.F. signature _____ Shift Foreman's Signature _____ Date _____
 Initial not required.

21. Testing completed and component released for normal use.

If S.F. signature _____ Shift Foreman's Signature _____ Date _____
 Initial not required.

22. Quality Control Department review of work and testing completed (QC work only).

_____ QC Department _____ Date _____

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification for has been signed off as required. Machinery history entry has been made, if required.

30 _____ Date 2-6-78
 Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____

250
WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 17915
Priority IR A
X I

W.O./Account No. TR003/530.1 NPRD Form Req'd. No

Items 1 through 5 completed by originator

1. System: Condensate Chemical Feed

2. Component (name & number) Ammonia + Hydrazine Injection Pumps
WT-P-12 + 15

3. Describe malfunction or modification and recommended corrective action.

System does not operate properly in MANUAL or AUTO. In manual, at 40% indicated Stroker position the pumps do not appear to inject chemicals; at 41% they pump too much. Cycle the Stroker thru its full travel to verify proper Stroker positioning note and indicator operation off operation is proper. repair the pumps. See Log Book for details.

4. Originator: V.P. Orlando Date/Time: 11/29/76 2000

5. Originator's Supervisor's Signature V.P. Orlando

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes _____ No
7. a. Does the work require a Radiation Work Permit? Yes _____ No
b. Is an approved procedure required to minimize personnel exposure? Yes _____ No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes _____ No
9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes _____ No
10. If the work does not have an effect on nuclear safety and no procedure is required per 7.b. the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety. Yes _____ No

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown 57.0

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M 029516

Material Order Generation

ITEMS RE B 9	DATE MO DAY YR	USED FOR / RETURNED FROM	STORE ROOM NAME	ISSUED TO (INTERCHANGE)	STORE ROOM NAME	DATE MO DAY YR
1	12 15	REPAIRS	TALL			
TXN 12 15	TXN 13 12	740	740	WORK REQUEST NO	ORDER	ACCOUNT
710	Issue	740	740	21677	WORK ORDER	ACCOUNT
720	Cash Sale	510	510		JOB NUMBER	PP
730	Charge Sale	620	620		NUMBER	SPEC CODE 45

STOCK SYMBOL NUMBER	Q	QUANTITY	U/I	QUANTITY	DESCRIPTION
MA	A	ISSUE/RETURN		REQUIRED	
46	55	57	EA	EA	ITEMS TO BE ORDERED FOR
1					ITEMS TO BE ORDERED FOR
2					ITEMS TO BE ORDERED FOR
3					ITEMS TO BE ORDERED FOR
4					ITEMS TO BE ORDERED FOR
5					ITEMS TO BE ORDERED FOR
6					ITEMS TO BE ORDERED FOR
7					ITEMS TO BE ORDERED FOR
8					ITEMS TO BE ORDERED FOR
9					ITEMS TO BE ORDERED FOR
10					ITEMS TO BE ORDERED FOR
11					ITEMS TO BE ORDERED FOR
12					ITEMS TO BE ORDERED FOR
13					ITEMS TO BE ORDERED FOR
14					ITEMS TO BE ORDERED FOR
15					ITEMS TO BE ORDERED FOR
16					ITEMS TO BE ORDERED FOR
17					ITEMS TO BE ORDERED FOR
18					ITEMS TO BE ORDERED FOR
19					ITEMS TO BE ORDERED FOR
20					ITEMS TO BE ORDERED FOR

M 029516

Material Order Generation

USED FOR / RETURNED FROM: PRZBR. WENTER'S

DATE MO DAY YR: SEP 16 1977

ISSUED FROM: T.M.I.

STORE ROOM NAME: 740

DATE MO DAY YR: SEP 16 1977

ITEMS: RE 8 9 MO DAY YR

ISSUED TO (INTERCHANGE): 264

STORE ROOM NAME: 740

WORK REQUEST NO: 21677

STRM NO 10 12

ACCOUNT: 528.1

ORDER: WORK ORDER NO. 528.1

JOB NUMBER: 528.1

ACCOUNT: 528.1

VOLT: 528.1

PP: 528.1

SPEC CODE: 45

ITEM NO	STOCK SYMBOL NUMBER		Q	QUANTITY ISSUE/RETURN	UNIT	QUANTITY REQUIRED	DESCRIPTION
	MA	SUB					
1	46	55	56.57	EA	8	SCIENTIFIC, CLEARSTAT SERIES 73	
2				EA	8	RETURN, 2 WATT, 10 KILOHM @ 4.75 Pa	
3				EA	8	SCIENTIFIC, CLEARSTAT SERIES 73	
4						RETURN, 2 WATT, 50 KILOHM @ 4.75 Pa	
5						TOTAL 36.00	
6							
7							
8						GRIDDLE (LAMP) BASKET PC 52504	
9						FOR COMPACT	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

*Pets are in Wilkes
Dunn's File Cabinet*

Att: [Signature]

SYSTEM REACTOR COOLANT
 LOCATION J-1 / 1
 TOLERANCE NA ENG. UNIT
NA OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN NA
 OR
 MAX. ERROR ENG. UNITS NA
 STATIC PRESSURE ERROR NA

INST. NO. GATE CONTROL UNIT #6
 SERIAL NO. _____
 MODEL OR TYPE 413 078
 FUNCTION GATE PER HTR SCR
~~INPUT~~ 10 - 50 ma DC
 OUTPUT FULL OFF To FULL ON
 ACTION CONTROL

REFERENCE DATA 208-580
ROBICON PRINT # 8032702 & 470130 / ROBICON MANUAL 900 052
900 128

SPECIAL DATA

CALIB.	INPUT ma DC	REQ'D DUTY CYCLE	ACTUAL DUTY CYCLE						
1	10	0%	0%						
2	38	50%	50%						
3	50	100%	100%						
4									
5									
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP. TEKTRONIX SER. NO. 3164827 LAST CAL. 5/77 CAL. FREQ. 6 Mos
 EQUIP. FOXBORO CALIBRATOR SER. NO. 2533996A LAST CAL. 7/77 CAL. FREQ. 6 Mos
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 9/8/77 INITIALS 8
 PERFORMED BY Sipe / GRIMM DATE 9/8/77 APPROVED BY [Signature] DATE 9/8/77

TMI UNIT 1
 INST. CAL. DATA SHEET

MTX 152/1

SYSTEM REACTOR COOLANT
 LOCATION 520
 TOLERANCE NA ENG. UNIT
NA OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN NA
 OR
 MAX. ERROR ENG. UNITS NA
 STATIC PRESSURE ERROR NA

INST. NO. GATE CONTROL UNIT #5
 SERIAL NO. _____
 MODEL OR TYPE 413 078
 FUNCTION GATE P.P.T. MTR SCR
~~INPUT~~ 10 - 50 mA
 OUTPUT Full off To Full on
 ACTION CONTROL

REFERENCE DATA GAI 203-580, RUBICON PRINT # 8032702 & 470130

RUBICON MANUAL 900 052 & 900 128

SPECIAL DATA

CALIB.	INPUT mADC	READ DUTY CYCLE	ACTUAL DUTY CYCLE
1	10	0%	0%
2	38	50%	50%
3	50	100%	100%
4			
5			
6			

REMARKS

TEST EQUIPMENT USED

EQUIP. TEKTRONIX SER. NO. B164827 LAST CAL. 5/77 CAL. FREQ. 6 MO
 EQUIP. FOXBORO CALIBRATOR SER. NO. 2533996A LAST CAL. 7/77 CAL. FREQ. 6 MO
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 9/8/77 INITIALS MS
 PERFORMED BY GRIMM/SIDE DATE 9/8/77 APPROVED BY [Signature] DATE 9/10/77

SYSTEM Reactor Coolant
 LOCATION 322/1000
 TOLERANCE NA ENG. UNIT
NA OR
NA % OF SPAN
 MAX. ERROR OF % OF SPAN NA
 OR
 MAX. ERROR ENG. UNITS NA
 STATIC PRESSURE ERROR NA

INST. NO. GATE CONTROL UNIT #4
 SERIAL NO. _____
 MODEL OR TYPE _____
 FUNCTION GATE PER HTR SCR
~~INPUT~~
 RANGE 10-50 m²
 OUTPUT Full OFF To Full ON
 ACTION Control

REFERENCE DATA GAI 208-580, ROBILON PRINT # 8032702 & 470130

ROBILON MANUAL 900 052 & 900 128

SPECIAL DATA

CALIB.	INPUT ma DC	REQ'D DUTY CYCLE	ACTUAL DUTY CYCLE						
1	10	0%	0%						
2	38	50%	50%						
3	50	100%	100%						
4									
5									
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP T RONI X O'SCOPE SER. NO. 3164827 LAST CAL. 5/77 CAL. FREQ. 6 Mos
 EQUIP FOXBORO CALIBRATOR SER. NO. 253376A LAST CAL. 7/77 CAL. FREQ. 6 Mos
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 9/8/77 INITIALS B

PERFORMED BY SIFE / GRIMM DATE 9/8/77 APPROVED BY [Signature] DATE 9/8/77

68

SYSTEM REACTOR COOLANT
 LOCATION 100
 TOLERANCE NA ENG. UNIT OR
NA % OF SPAN
 MAX. ERROR OF % OF SPAN NA
 MAX. ERROR ENG. UNITS NA
 STATIC PRESSURE ERROR NA

INST. NO. GATE CONTROL UNIT #3
 SERIAL NO. _____
 MODEL OR TYPE _____
 FUNCTION GATE PER HTR. SCR
 INPUT RANGE 10 - 50 mA
 OUTPUT Full OFF To Full ON
 ACTION CONTROL

REFERENCE DATA GAI 208-580, ROBICON PRINT #8032702 & 470130

ROBICON MANUAL 900 052 & 900 128

SPECIAL DATA

CALIB.	INPUT mA DC	REQ'D DUTY CYCLE	ACTUAL DUTY CYCLE
1	10	0%	0%
2	38	50%	50%
3	50	100%	100%
4			
5			
6			

REMARKS:

TEST EQUIPMENT USED

EQUIP.	SER. NO.	LAST CAL.	CAL. FREQ.
<u>TEKTRONIX O'scope</u>	<u>B164827</u>	<u>5/77</u>	<u>6Mos</u>
<u>FOXBORO CALIBRATOR</u>	<u>2533996A</u>	<u>7/77</u>	<u>6Mos</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

MACHINERY HISTORY ENTRY

DATE 9/8/77 INITIALS MS

PERFORMED BY GRIMM/SIDE

DATE 9/8/77 APPROVED BY [Signature] DATE 9/8/77

M 029516

Material Order Generation

ITEMS RE 8 SUB 9	DATE MO DAY YR	ISSUED FOR / RETURNED FROM	STORE ROOM NAME	ISSUED TO (INTERCHANGE)	STORE ROOM NAME	DATE MO DAY YR
		PERZEL, HEINER	T111	264		
TXN	TXN	TXN	TXN	TXN	TXN	TXN
13 15	13 15	13 15	13 15	13 15	13 15	13 15
710	740	740	740	740	740	740
720	510	510	510	510	510	510
730	620	620	620	620	620	620
	Issue	Cash Sale	Charge Sale	Scale Sale	Return/Restock	Interchange

ITEMS RE 8 SUB 9	DATE MO DAY YR	ISSUED FOR / RETURNED FROM	STORE ROOM NAME	ISSUED TO (INTERCHANGE)	STORE ROOM NAME	DATE MO DAY YR	ACCOUNT		ACCOUNT		ACCOUNT		SPEC CODE
							VOLT	PP	ACCOUNT	VOLT	PP	ACCOUNT	
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

SCIENTIFIC, CLAROSTAT SERIES 73
 RETURN, 2 WATT, 10 KILOHM @ 4.75 ea
 SCIENTIFIC, CLAROSTAT SERIES 73
 RETURN, 2 WATT, 50 KILOHM @ 4.75 ea

TOTAL \$ 76.00

GUMBLE BLAND BLANKET P.O. 52504

FOR C/M/967

APPROVED: *[Signature]*

QA SYSTEMS LIST CHANGE

Not required.

TEST/RETEST

Functional Testing and recalibration of the entire control will be required upon completion of this modification.

DRAWING CHANGES REQUIRED

No drawings-changes are required.

SAFETY EVALUATION

Because this modification does not constitute a change to a system or component as described in the FSAR, a written safety evaluation is neither necessary nor included.

Submitted: A. W. Totherc
A. W. Totherc 2-4-78
Ext. 182

Reviewed: G. E. May
G. E. May
Ext. 158

Approved: R. M. Klingaman
R. M. Klingaman
Manager-Generation Engr.
Ext. 101

Approved: G. J. Troffer 2/14/78
G. J. Troffer
Manager-Operational Quality Assurance
Ext. 111

AWT:GEM:RMK:GJT:pg

cc: J. G. Herbein*
J. P. O'Hanlon
W. W. Cotter
File: 61.0006.0007

L. L. Lawyer
V. P. Orlandi
D. J. McGettrick

GRC Secretary
GORB Secretary
Task 4851

METROPOLITAN EDISON COMPANY

Subsidiary of General Public Utilities Corporation

Handwritten: C/M 967

Subject TMI UNIT 1 PRESSURIZER HEATER CONTROL
MODIFICATION, C/M 967, TASK 4851

Location Reading

Date Feb. 15, 1978
GEM 0644

To ~~XXXXXXXXXXXX~~

BACKGROUND

This memo is written in response to TMI-1 Change Modification 967 dated 11/11/77 (Reference 1). This Change Modification requests that the gain and bias potentiometers on the pressurizer heater control units be replaced. The present potentiometers have a 270° maximum mechanical turn which results in high sensitivity and poor setability. The requested replacements have 3600° effective mechanical rotations for better setability.

It is necessary that the gain and bias potentiometers be reset when other components in the control units either drift or are replaced with those of slightly different sensitivities or values. The electrical characteristics of the proposed replacements are the same as those presently installed.

CONCLUSION AND RECOMMENDATIONS

Generation Engineering concurs with the recommendations presented in Change Modification 967. The replacement of the potentiometers will allow easier re-setting of the bias or gain circuits when drift is noticed or other components are replaced. This change will not affect the operation of the heater controls.

REFERENCE

- 1) TMI Unit 1 Change Modification 967 dated 11/11/77

DISCUSSION

As discussed in the BACKGROUND of this memo, all electrical characteristics of the existing potentiometers are the same as those of the proposed replacements. The only difference is the degree of maximum mechanical turn as described in the BACKGROUND.

FSAR CHANGE

Not required.

Construction

1. High temperature molded plastic core, front cup and rear lid.
2. Contact carries inside and outside tracking shoes for easy riding, no cocking. Doesn't contact winding.
3. All outside contacts gold plated for solderability. Beryllium copper, heat treated for stability under heavy loads.
4. Stainless steel shafts, molded into drum.
5. Element on outside of drum for easy inspection.
6. Contact of special alloy, extra smooth, with no granular roughness.

Mechanical

Number of Turns 1, 3, 5 and 10
 Total Mechanical Travel $3600^\circ + 10^\circ - 0^\circ$
 Torque 1.5 Oz.in. Max.
 Stop Strength50 Oz.in. Min.

Environmental

Rotational Life 500,000
 Shock 50G
 Vibration 10G, 55-2000 Hz

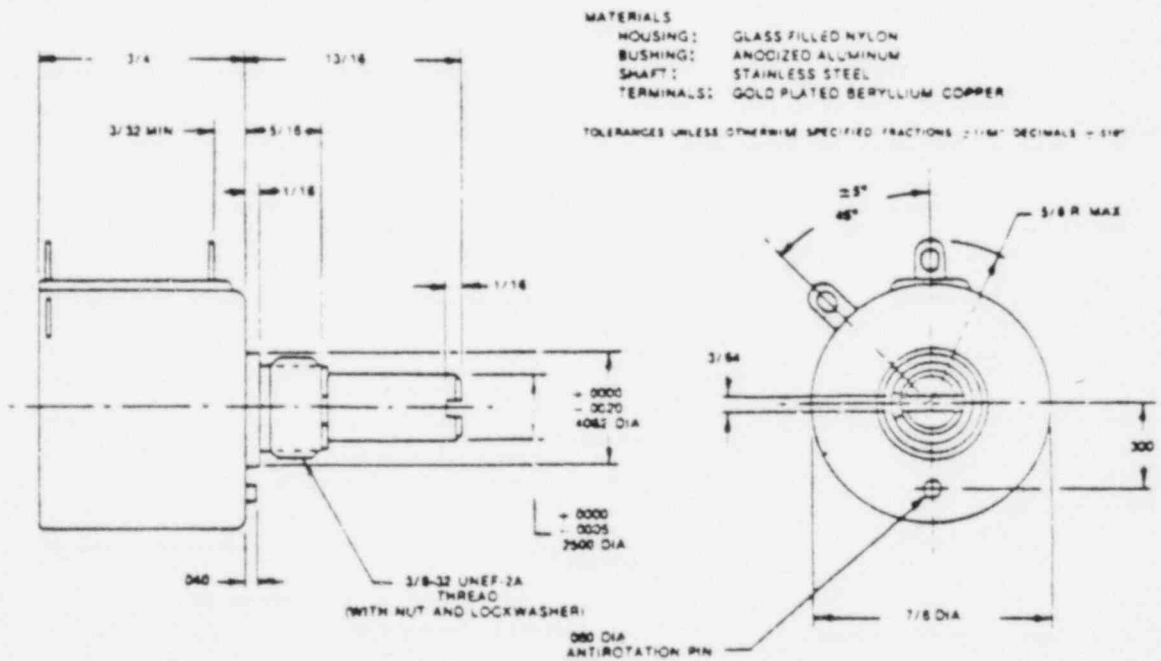
One year guarantee on material and workmanship.

COIL DATA

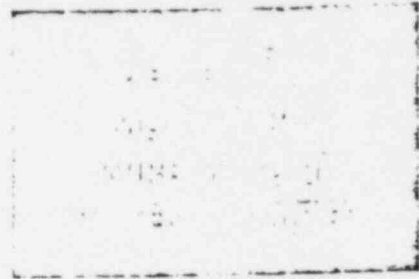
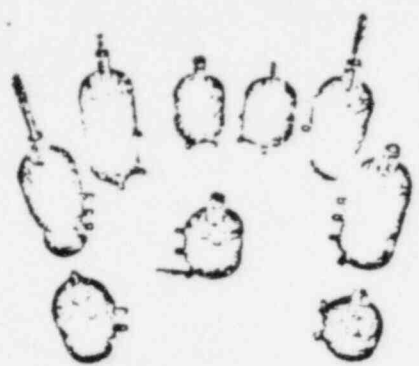
Total Resistance	Nominal Resolution (%)
100 Ohms	.055
200 Ohms	.037
500 Ohms	.030
1000 Ohms	.025
2000 Ohms	.021
5000 Ohms	.020
10K Ohms	.017
20K Ohms	.015
25K Ohms	.013
50K Ohms	.011
100K Ohms	.009

Variations

- Special resistances to 200K
- High torque
- Flatted shafts
- Shaft locks
- Rear shaft extension
- Plastic shaft
- O-ring shaft seal
- Non-linear functions
- Dual units
- Servo mounting
- Slip clutch
- Switches on concentric shaft



CLAROSTAT MFG. CO., INC.
 DOVER
 NEW HAMPSHIRE 03820



Series 73 opens new application areas for the inherent advantages of multi-turn potentiometer design. A precise 10-turn potentiometer offering electrical operating characteristics comparable to units costing far more. The Series 73 was designed specifically for the industrial instrumentation market, based upon setability and resolution of a quality 10-turn potentiometer including better instrument control and settings for all types of electronic equipment.

SPECIFICATIONS

Dimension	7/8" dia., 3/4" Deep. Single cup
Working Voltage	450 Volts maximum (Power not to exceed rating).
Resistance Range	100 Ohms to 100K Ohms Standard. Higher Values Special.
Total Resistance Tolerance	± 5% Standard, ± 1% Special
Independent Linearity	100 Ohms to 100K Ohms, ± 0.25% Standard, 1% to .05% Special.
Absolute Min. Resistance	0.25% maximum or 0.5 Ohms whichever is greater.
End Resistance	0.2% of total resistance or 1 Ohm whichever is greater.
Power Rating (Watts)	2 watts at 70°C derated to 0 at 105°C.
Electrical Rotation	3600° +10° -0° Standard, less than 10 turns, in 1 turn increments Special.
Effective Rotation	3600° nominal Standard, less than 10 turns, in 1 turn increment Special.
Overtravel	10° maximum each end Standard.
Noise (Enr)	100 Ohms maximum.
Dielectric Strength	1000 Vac for 60 Seconds at ATM.
Insulation Resistance	1000 Megohms minimum.
Rated Temperature Coeff.	± 20 PPM/°C wire, ± 70 PPM/°C control
Operating Temperature Range	-55°C to 105°C.
Mechanical Rotation	3600° +10° -0° Special; less than 10 turns, in 1 turn increments.
Stop Torque	50 oz. in. minimum.
Rotational Torque	1.5 oz. in. maximum.
Max. Speed of Rotation	60 RPM.
Bearings	Sleeve bearings. Ball bearings Special.
Housing	Molded Plastic.
Hardware	(a) Hex mounting nut: 3/8" x 32 thd., 1/2" across flats, 3/32" thick. (b) Internal tooth lockwasher 11/16" O.D. x .022" thick.
Wiper	Precious metal material.
Shaft	Stainless Steel.
Marking	Unless otherwise specified, marking will be as follows: Total resistance value, Customer's Part No. or Clarostat Part No., date code.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Press. Bias & Gain PoB

Unit No. 1

Nuclear Safety Evaluation

Does the Change/Modification:

- (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes no ✓
- (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety and analysis report? yes no ✓
- (c) reduce the margin of safety as defined in the basis for any technical specification? yes no ✓

Details of Evaluation (Explain why answers to above questions are "no". Attach pages if required.)

The resolution of the present GAIN (P1) and Bias (P2) potentiometers is poor because the pots are 270° turns which results in high sensitivity.

It is recommended that the pots be replaced with ones that have 10 turns. These pots will still have the same electrical characteristics as the ones presently installed. Pots will be a Clavette Series 73 (see attached spec sheet)

The new pots will not change the operation of the pressurizer heater controls. For the above reasons this change will not reduce the margin of safety.

*NOTE: If these questions are "yes", the change must receive N.R.C. approval.

Evaluation prepared by: D. J. McArthur Date 11-7-77
 Reviewed by: V.P. Orlando Date 11/9/77
Lead Engineer
 Y Approved by: J.P. [Signature] Date 11/11/77
Unit Superintendent

Unit No. _____

REFUELING 78

Change Modification No. 967
Priority 10
Operator Training YES NO ✓
QC YES NO

1. System: REFUELING SYSTEM

2. Component: REACTOR CONTROL SYSTEM

3. Describe Change/Modification requested:

REACTOR CONTROL SYSTEM ON AVERAGE CONTROL UNIT'S PER
PERFORM ALERTS.

4. Reason for Change/Modification:

PERFORM ALERTS

5. Supervisor of Maintenance _____

Date 10-10-77

6. Cognizant Engineer assigned

MS M. H. L. B.

7. Does the work constitute a change to a system or component as described in the FSAR? Yes _____ No ✓

8. If 7 above is "yes", does the change constitute an Unreviewed Safety Question? NA Yes _____ No _____

9. If 8 is "yes", the work must receive NRC approval prior to performance.
If 8 is "no", prepare and attach a detailed safety evaluation (page 2 of this form).

Lead Engineer V. P. [Signature]

Date 11/9/77

10. Station Superintendent/Unit Superintendent has taken the following action: (Check either a or b)

(a) Reviewed the change/modification and it does not constitute a change to a system or component as described in the FSAR.

(b) The change/modification is a change to a component or system described in the FSAR but the change does not constitute an Unreviewed Safety Question. A written safety evaluation has been prepared and forwarded to the Manager, Generation Engineering for concurrence and documentation.

(c) PORC review requested YES _____

NOTE: Q.C. modifications must receive Mgr. Generation Engineering & Mgr. OQA approval

Unit Superintendent _____ Date _____

Post Change/Modification Review and Follow-Up

11. Supervisor of Maintenance - All action on Work Request which performed this change/modification is complete.

Signature [Signature] Date 2/25/79

12. Lead Engineer - Necessary follow-up action has been taken as listed below.

- (a) Revised Drawings Submitted (list affected drawings) _____
- (b) FSAR Changes Submitted (list affected section) _____
- (c) Procedure Changes Submitted (list affected procedures) _____
- (d) Preventive Maintenance Revised _____
- (e) Necessary Spare Parts Ordered _____

Signature _____ Date _____

13. Unit Superintendent-Signature _____ Date _____

14. As Built Letter Number _____

- 6.4 Attempt to tune the controller so the process can be maintained at the required setpoint.
- 6.5 Calibrate per steps 6.6 through 6.7 if the repair in any way affected the calibration of the instrument or if the system can't be properly tuned.
- 6.6 Using the vendor manuals applicable to the type of instrument being calibrated, proceed with calibration.
- 6.7 Record the data on the data sheet obtained from the MTX file.
- 6.8 Repeat step 6.4.
- 6.9 After the work is complete, remove all test equipment and return the system/loop to its normal configuration.
- 6.10 Post Maintenance Testing
 - a) As left data must meet the tolerance specified on the MTX Data Sheet or the manufacturers tolerance.
 - b) Replace controller cover and remove all tools and material from the work area.
 - c) Turn the controller over to the Shift Foreman to perform functional test as applicable.
 - d) Required controller setpoint (or band) _____
As left controller setpoint (or band) _____
(Must match \pm _____%)

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

REPLACE FREEZ HEATER CONTROL POTS FOR GAIN AND BIAS

2. Purpose:

INSTALLED POTS HAVE POOR RESOLUTION

3. Description of system or component to be worked on.

ROBICON SCR CONTROLS ON FREEZ HEATERS

4. References:

4.1 ROBICON TIM 4.3 1430-Y-10
4.2 NNI MTK

5. Special Tools, Materials and Qualifications required.

POTS -

6. Detailed Procedure (attach additional pages as required)

6.1 REPLACE THE POTS WITH MULTI-TURN POTS
6.2 CALIBRATE THE SCR CONTROLS PER REF 4.2 & 4.3

Complete in accordance with c/m 967
New

Supervisor of Maintenance Recommends Approval W. J. [Signature] Date 2-28-78

*Unit 1 PORC Recommends Approval _____ Chairman _____ Date _____ *Unit 2 PORC Recommends Approval _____ Chairman _____ Date _____

*Unit 1 Supt. Approval _____ Date _____ *Unit 2 Supt. Approval _____ Date _____

Supervisor Quality Control _____ Date _____

*NOTE: These approvals require only on Nuclear Safety Related/Radiation Work Permit Jobs.

12. Limits and Precautions:

- a) Personnel API003
- b) Equipment COLD IRON
- c) Environment
- d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria. POTS REPLACED - CAL. UNITS PER 1430-Y-

14. Estimated manhours to perform job: E IC 16 M U

15. Maintenance Foreman Assigned:

16. QC Dept. review, if required in item No. 8

QC Supervisor R. Neely Date 3/1/78

17. Supervisor of Maintenance approval to commence work: PC [Signature] Date 3/1/78

18. Shift Foreman's approval to commence work Date

[Signature]

Initial if Shift Foreman Tagging Application No. Radiation Work Permit No.
signature is not required

19. Comments on work performed:

work completed

Retest met acceptance criteria Yes No

Work Performed by date/time P. Tinnes Date 5/4/78 Work Reviewed - Maintenance Foreman's Signature [Signature]

20. Work completed and component aligned for testing.

[Signature]
Initial if S.F. signature is not required. Shift Foreman's Signature Date

21. Testing completed and component released for normal use.

[Signature]
Initial if S.F. signature is not required. Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. N/A QC Department [Signature] Date 2/13/79

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job 20 Supervisor of Maintenance Signature [Signature] Date 2/25/79

3.18
TOWARDS BOTTOM
OF PAGE

AREA 10

WORK REQUEST APPROVAL
TMI Nuclear Station

~~N.N.O~~

Unit No. _____

W.O./Account No. TR003/5303

NPRD Form Req'd No

Work Request No. 21677

Priority ID

I

Items 1 through 5 completed by originator

1. System: REACTOR COOLANT

2. Component (name & number) PRESSURIZER HEATER CONTROLS

3. Describe malfunction and cause of malfunction (if known) or modification desired.

REPLACE GAIN AND BIAS POTS ON ROBICON SCR CONTROL UNITS WITH 10-TURN POTS. GAIN IS 10K-Ω, 2W, BIAS IS 50K-Ω, 2W.

CHANGE/MOD.

APPROVED Gem 0644

4. Originator: J.W. Wilson

Date/Time: 10/17/77

5. Originator's Supervisor's Signature J.W. For P. Harper

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. 967

Yes No

7a. Does work require an RWP

Yes No

7b. Is an approved procedure required to minimize personnel exposure.

Yes No

8a. Is work on a QC component as defined in GP 1008.

Yes No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used.

Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

1430-X-10 Rev. 0 1/13/77
Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026

Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact

Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

W. Operating as S/D

6. Procedure

- 6.1 Inform control room of transmitter to be worked on.
- 6.2 Isolate the transmitter
- 6.3 Blow down the low impulse line by opening the blow down valve
- 6.4 Shut the blow down valve
- 6.5 Return the transmitter to service
- 6.6 If the transmitter still appears to be reading wrong isolate it, vent it and return to service again
- 6.7 Report to other transmitters in room.
- 6.8 If the problem re-occurs document it, report it and shut the level and affected transmitters.
- 6.9 Fill out the tank level reading on the attached sheet.

Date	Time	Level	Level	Level	Level
7-14-77	LT 3	12.33	12.90	12196	4
7-29-77	LT 4	12.74	12.73	12334	} 4
7-29-77	LT 3	13.31	12.69	12339	
8-2-77	LT 3	13.36	13.06	12343	2
8-16-77	LT 1	13.27	13.27	12443	
	LT 2	13.27	13.27		
	LT 3	13.42	13.04		
	LT 4	13.06	13.06		
8-25-77	LT 1	13.19	12.19	12567	2
	LT 2	13.21	13.21		
	LT 3	12.95	12.95		
	LT 4	13.00	13.00		
8-31-77	LT 3	12.48	12.98	12630	=
	LT 1	12.44	12.44	12671	
9/5/77	LT 2	12.45	12.91	12732	4
	LT 3	13.01	12.94		
	LT 4	12.85	13.00		
9/13/77	LT 1	13.24	12.34	12732	4
	LT 2	13.10	12.20		
	LT 3	12.31	12.20		
	LT 4	12.96	12.96		
11/11/77	LT 3	13.04	12.15	12371	2
	LT 4	13.01	12.15		
11-30-77	LT 3	13.33	12.91		
	LT 4	12.94	12.93		

Date	LT	Time	Time	Time
12-8-77	LT-1	13.17	13.17	# 13624
	LT-2	13.05	13.05	
	LT-3	12.94	12.94	# 13678
	LT-4	12.90	12.90	

Date	LT	Time	Time
12/14/77	LT-1	13.12	
	LT-2	13.07	
	LT-3	13.28	12.88
	LT-11	12.91	

Date	CF2LT3	Time	Time	Time
12-23-77	CF2LT3	13.30	13.12	13783 Timms LANG-CHEN

Date	CF2LT3	Time	Time	Time
12-30-77	CF2LT3	13.32	12.88	13852 Timms HOCKLEY

Date	CF2LT3	Time	Time	Time
1-6-78	CF2LT3	13.27	12.93	13935 Timms GIBSON

Also New back loc side of tank in same Tank Area 0

Date	LT	Time	Time	Time
1-13-78	LT 1	12.72		X0002 Longhorn General Timms
	LT 2	13.04		
	LT 3	12.44		
	LT 4	12.48		

Date	LT	Time	Time	Time
2-17-78	LT1	13.20	13.00	16310
	LT2	13.03	13.02	
	LT3	13.37	12.92	
	LT4	13.13	13.13	

Date	LT	Time	Time	Time
2/23/78	LT1	13.17	13.17	16359 Kelley
	LT2	13.01	13.01	Grimes
	LT3	13.47	12.97	
	LT4	13.13	13.13	

		Before (0810)	After (10:03)	RWP	m/l
3-5-78	LT1	13.32	13.00	16471	2
	LT2	12.96	12.96		
3-9-78	LT1	13.26	12.97	RWP	
	LT3	13.23	13.23	16550	
5/13/78	LT1	13.27	12.98	16599	5
5-24-78	LT1	13.24	12.96	18009	
6-15-78	LT1	13.15			
7/30/78	LT4	13.19	12.73	18919	7

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

Blow down core flood level transmitter lines

2. Purpose:

To correct the deficiency listed on this W.R.

3. Description of system or component to be worked on.

CF2-LT 1, 2, 3, 4

4. References:

1430-4-17

5. Special Tools, Materials and Qualifications required.

NA

6. Detailed Procedure (attach additional pages as required)

Attached

Supervisor of Maintenance recommends approval *[Signature]* Date *7-7-77*

• PORC Recommends approval - Chairman *[Signature]* Date *7-7-77*

• Unit/Station Superintendent Approval *[Signature]* Date *7-7-77*

NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

12. Limits and Precautions.

a) Personnel

R-1002/1003

b) Equipment

Co-ordinate with ops - Only one transmitter per tank to be isolated at a time

c) Environment

NA

d) Nuclear

NA

13. Post Maintenance Testing required and Acceptance Criteria.

Water removed from sensing lines

14. Estimated manhours to perform job: E _____ IC 8 M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 QC Form 1014 for NW COTTEL Date 7/7/77

17. Supervisor of Maintenance approval to commence work: [Signature] Date 7

18. Shift Foreman's approval to commence work [Signature] Date 7/27/77

Initial of Shift Foreman NA
signature is not required. Tagging Application No. _____

[Signature]
Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed: *Blow down sensing lines using tanks provided*

[Signature]

Work Completed - Maintenance Foreman's Signature

10-3-78

Date/Time

20. Work completed and component aligned for testing.

[Signature]

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

[Signature]

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

> 100

Actual Manhours to perform job

[Signature]

Supervisor of Maintenance Signature

10-10-78

Date

WORK REQUEST APPROVAL
TMI Nuclear Station

2035
1000

Unit No. _____

Work Request No. _____

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority 17

W.O./Account No. 7000/530.1 NPRD Form Req'd. No

Items 1 through 5 completed by originator

1. System: PURE FLOODERS

2. Component (name & number) LEVEL TRANSMITTERS

3. Describe malfunction or modification and recommended corrective action.

LEVEL TRANSMITTERS APPEAR TO HAVE WATER IN
THEIR SENSING LINES.

4. Originator: H.W. Wilson Date/Time: 7-7-77

5. Originator's Supervisor's Signature: Wm Lee K. Hunter

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes _____ No

7. a. Does the work require a Radiation Work Permit? Yes No _____
b. Is an approved procedure required to minimize personnel exposure? Yes No _____

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10 also. Quality Control Dept. must review the work request prior to commencement of work.
Yes No _____

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes No _____

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

W.L.K.
Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

Operating as SD

NO. 75-70

QA SURVEILLANCE REPORT

H. Wilson - I & C
DEPARTMENT: I & C

SYSTEM: CO

EVOLUTION SURVEILLED: Flush & Hydro of level transmitters

REFERENCE: (DWG., SPECIFICATION, PROCEDURE, WELD MAP, ETC.) W/R 7552, Change/Mod 261, GEM 1842.

OBSERVATION: Observed the flush and hydro of level transmitters to be used as temporary replacements for CO-LT-43 and 44.

Transmitters: Foxboro d/s cell model E130M serial numbers 2630675 and 2636076. The hydro was conducted using a dead weight tester - no leaks observed.

The flush media was Grade A clean water. Inspection of the ASTM E-11 Sieve #45 revealed no particle specking or organic contamination.

DIST: MOQA	Supv. of Maint.
MGE	Original-File
Sta. Supt.	H. Wilson - I&C
Unit #1 Supt.	

QA SYSTEM LIST YES

CONFORMING MOQA 5/75

NONCONFORMING QC Spec/Asst. Unit

QC Spec/Asst.

PCR OR STOP WORK NO.

APPROVED: H. Wilson 5/75

Supervisor-QC Date

GPF 4012 201
4/30/74
Rev. 0

Mr. D. M. Showlin

- 2 -

- c) The margin of safety as defined in Sec 3.4 of Technical Specifications (Chap. 15 of PSAR for TMI Unit 1) is not reduced.

RWP:cas

cc: J. G. Herbein
M. W. Johnson
W. E. Potts
H. b. Wilson
Task #0941

File: 20.1.2/26.0

Submitted:

R. E. Prabhakar
R. E. Prabhakar

Reviewed:

G. E. May
G. E. May

Approved:

R. M. Klingman 3/2/75
R. M. Klingman
Mgr.-Generation Engineering

BMM Gutierrez
L. L. Gutierrez
Mgr.-Operational Quality Assurance

METROPOLITAN EDISON COMPANY Subsidiary of General Public Utilities Corporation

Subject CHANGE/MOD. #261 TEMPORARY INSTALLATION OF FOXBORO TRANSMITTERS - MODEL Z13DM FOR CONDENSATE STORAGE TANK LEVEL INDICATION - TMI-1 (GEN. ENG. TASK #0941 & 0998) Location Reading
Date March 31, 1975
GEN 1848

To MR. D. M. SHOVLIN

Background:

This is in reference to your memo to R. M. Klingaman & L. L. Lawyer dated 3-12-75 requesting approval of change/mod. 261 by Generation Engineering. Change/mod. 261 is regarding the installation of Foxboro d/p cell transmitters, Model Z13DM, downstream of the gauge isolation valves, in place of the malfunctioning Foxboro level transmitters, Model 617M, presently used for level indication in the condensate storage tanks A&B, the tag numbers of the devices being CO-LT-43 & CO-LT-44.

Discussion:

Generation Engineering approves the change for the following reasons:

- a) The change will only be temporary until the condensate storage tanks can be drained thereby permitting repair/calibration of the presently installed level transmitters (Foxboro type 617M).
- b) If for any reason the new d/p cell transmitters should fail, we can always revert to the present method of checking condensate storage tank level every two hours from the gauges installed for this purpose.
- c) The material certification and seismic documentation attached with the letter are adequate.
- d) Calibration, hydrostatic test and cleaning of the units will be performed before actual installation of the d/p cell transmitters.

References:

GAI dwg. C-302-101
Memo to Messrs. L. L. Lawyer & R. M. Klingaman from Messrs. M. W. Johnson & H. L. Wilson, dated 2-21-75

Safety Evaluation:

In view of the foregoing discussion, the subject change is not considered to involve an unrevised safety question for the following reasons:

- a) The probability of occurrence or the consequences of an accident or malfunction of equipment evaluated in Chap. 14 of PSAR for TMI Unit 1 will not in any way be increased.
- b) There is no possibility for an accident or malfunction of a different type than previously evaluated in Chap. 14 of PSAR for TMI Unit 1.

INTER-OFFICE MEMORANDUM

Change/Modification Request Form - Page 2 of 2
TMI Nuclear Station
Safety Evaluation

Unit No. 1

Work Request No. 7553

1. System: CONDENSATE 2. Component: CO-4747 & CO-47-44

3. Describe Change/Modification:
INSTALL TEMPORARY FORBID E13DM TRANSMITTERS ON GAUGE LINES FOR ABOVE TRANSMITTERS. CONNECT E13 OUTPUTS TO NORMAL OUTPUT LINES.

4. Reason for Change/Modification:
TO RESTORE CONTROL ROOM CONDENSATE STORAGE TANK level INDICATION UNTIL THE NORMAL TRANSMITTERS CAN BE REPAIRED

5. Explain in detail why above Change/Modification does not involve an Unreviewed Safety Question as defined in 10CFR 50.59 (c).

Does the attached C/M change:

- * (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes no
- * (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report? yes no
- * (c) reduce the margin of safety as defined in the basis for any technical specification? yes no

Details of Evaluation (Explain why answers to above questions are "no". Attach additional pages if required.)

The above change is only a temporary until proper calibration can be done on presently installed transmitter - (after installation of isolation valves) ← The temporary transmitter will give an accurate indicator of condensate level and allow for safe operation. Must have accurate indication in order to meet Tech Specs. The temporary transmitter will not interfere with the normal operation of the condensate storage tank.

Evaluation prepared by: E.J. McArthur Date 3/9/75

Reviewed and approved by: V. K. Bhandari Date 3/10/75
Station Engineer

Approved by: J. J. Calit Date 3-11-75
Station Superintendent / Int. Superintendent

3/11 261

This form is used by the Supervisor of Maintenance when a Work Request submitted to him represents a change or modification to an existing system or component. Change/Modification Request procedure (A.P. 1010, Sect. 7.0) should be used in completing this form.

System: CONDENSATE 2. Component: CO-LT 43 & CO-LT-44

Describe Change/Modification requested:
INSTALL FOXBORO EISDM TRANSMITTERS ON GANGE LINES FOR ABOVE TRANSMITTERS. CONNECT EIS OUTPUTS TO NORMAL OUTPUT LINES.

Reason for Change/Modification:
TO RESTORE CONTROL ROOM CONDENSATE STORAGE TANK LEVEL INDICATION UNTIL THE NORMAL TRANSMITTERS CAN BE REPAIRED.

Supervisor of Maintenance: Jim Shobe Date: 2-26-75

Cognizant Engineer assigned (by Station Engineer): M. Litnick
 Does the work constitute a change to a system or component as described in the task? Yes No

If 7, above, is "yes", does the change constitute an Unreviewed Safety Question? Yes No

If 6, is "yes", the work must receive AEC approval prior to performance.

If 8, is "no", prepare and attach a detailed safety evaluation (page 2 of this form).
 Station Engineer: [Signature] Date: 3/10/75

PORC has reviewed change/modification and agrees that it does not constitute a change to the FSAR or an unreviewed safety question. Chairman of PORC: [Signature] Date: 3/11/75

Station Superintendent/Assistant Superintendent has taken the following action: (check only one)

- (a) Reviewed the change/modification and it does not constitute a change to a system or component described in the FSAR.
 - (b) The change/modification is a change to a component or system described in the FSAR but the change does not constitute an Unreviewed Safety Question. A written safety evaluation has been prepared and forwarded to the Manager, Generation Engineering for concurrence and documentation.
 - (c) The change has been sent to the Manager-Generation Engineering for action.
- Station Superintendent/Assistant Superintendent: [Signature] Date: 3-11-75

Post Change/Modification Review and Follow-Up

2. Supervisor of Maintenance - All action on Work Request which performed this change/modification is complete.
 Signature: [Signature] Date: _____
3. Station Engineer - All follow-up action, such as print and procedure revisions, required as a result of this change/modification are complete.
 Signature: _____ Date: _____
4. Station Superintendent/Assistant Superintendent - All action required to complete this change/modification is complete.
 Signature: _____ Date: _____

PORC review is required only when requested by Station Superintendent. If PORC review is made the quorum must consist of two off-site members and two plant staff members including the Chairman or Vice Chairman.

THE UNIT 1
INST. CAL. DATA SHEET

MTA 41

SYSTEM Indicate
LOCATION CO-TI-A
TOLERANCE 1/2 (±0.0 ma) % OF SPAN
MAX ERROR OF % OF SPAN 0.
STATIC PRESSURE ERROR NA

INST. NO. Temporary LT-43
SERIAL NO. 2636075
MODEL OR TYPE E13DM St. 1/2 B
FUNCTION Transmitter
RANGE 0-205" H₂O
OUTPUT 10-50 mV
ACTION Direct

REFERENCE DATA Foxboro 20-140

SPECIAL DATA Temporary transmitter: P0 41329 Item 5 Tag: Spare BMRK-11
shd 64
calibrated in series 20% span range for special application

CALIB.	H ₂ O inches	PSE inches	RVD inches	UP	Down
1	0"	0	10	10	10
2	60"	2.16	20	20	20
3	120"	4.33	30	30	30
4	180"	6.50	40	40	40
5	240"	8.67	50	50	50

REMARKS Suppression unit milled with 0" DP in
Proposed use CO-LT-43

TEST EQUIPMENT USED			
EQUIP. <u>Foxboro Current Cal</u>	SER. NO. <u>2533996A</u>	LAST CAL. <u>Dec 74</u>	CAL. FREQ. <u>6mo</u>
EQUIP. <u>W-T Pres. Range</u>	SER. NO. <u>PP14138</u>	LAST CAL. <u>Jan 75</u>	CAL. FREQ. <u>1yr</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 5-13-75

INITIALS AB

PERFORMED BY D Lang

DATE 5-13-75 APPROVED BY H Wilson

DATE 2-20-75

MTX 41

THREE MILE ISLAND NUCLEAR STATION
UNIT 1
INSTRUMENT CALIBRATION DATA SHEET

SYSTEM *CONDENSATE
LOCATION *CO-TI-B
TOLERANCE 1/2 (± 0.20 MA) 3 OF SPAN
MAX ERROR OF % OF SPAN 0
STATIC PRESSURE ERROR NA

INST. NO. *TEMPERARY LT-44
SERIAL NO. 2636076
MODEL OR TYPE E18 STYLE B
FUNCTION TRANSMITTER
RANGE 0-205" H₂O
OUTPUT 10-50 mA
ACTION DIRECT

REFERENCE DATA

Fox. 20-140

SPECIAL DATA TEMPERARY TRANSMITTER: P.O. 41329 ITEMS
TAG SPACE SHOWN ON SHEET 64
CALIBRATED IN SPECIAL 20% OVER-RANGE FOR SPECIAL APPLICATION

CALIB.	H ₂ O INPUT	WET INPUT	RED CUT	INCR	DECR
1	0"	0	10	10	10
2	60"	2.16	20	20	20
3	120"	4.23	30	30	30
4	180"	6.50	40	40	40
5	240"	8.67	50 MA	50	50

REMARKS SUPPRESSION UNIT WAS USED WITH C OF 2000/50
*PROPOSED USE CO-LT-44

TEST EQUIPMENT USED

EQUIP. <u>FOX CAL</u>	SER. NO. <u>2533994A</u>	LAST CAL. <u>DEC 24</u>	CAL. FREQ. <u>6 MO</u>
EQUIP. <u>HEISE</u>	SER. NO. <u>11824</u>	LAST CAL. <u>JAN 25</u>	CAL. FREQ. <u>ANN</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 5-13-75 INITIALS HW

PERFORMED BY C. YEAGLEY DATE 2-20-75 APPROVED BY H. Wilson DATE 2-20-75

(15A)

11/17/81

3 METERED THERMISTATION #1
 INCLUDING LOOP TEST

SYSTEM: I C.C. CONDENSATE DATA SHEET 1 OF 1
 STATION OR LOOP NO. CO-LT-44 TOLERANCE ±0.04°F
 DRAWING REF. SC2-101 MAX. ERROR 0

DESCRIPTION: CST B LEVEL STATIC PRESSURE ERROR NA

CORRECTION SETTINGS		LI 44A		LI 44B	
INPUT	DESIGN HCT	DESIGN ACTUAL	INPUT	DESIGN ACTUAL	
CUT	CUT	IND	IND	IND	IND
0"	1000	9.93	0'	0	0'
60"	20	20.02	5'	5'	5'
120"	30	30.08	10'	10'	10'
180"	40	40.14	15'	15'	15'
240"	50	50.02	20'	20'	20'

TEST EQUIPMENT USED		CAL. FREQ.	
SER. NO.	NO.	LAST CAL.	DATE
WAT	14138	2/23/81	1/81
WAT	177		1/81
WAT	177		1/81
WAT	177		1/81
WAT	177		1/81
WAT	177		1/81

APPROVED BY: [Signature] DATE: 5-13-85

UNIT: I

SYSTEM: CONDENSATE

DATA SHEET: 1

STATION OR LOOP NO.: C0-KT-A3

TOLERANCE: ± 0.1%

STATION ID: 302-101

MAX. IMPUR: 2%

DESCRIPTION: CST A LEVEL

STATIC PRESSURE HIGH: NA

CORRECTION SETTINGS: NA

INLET OUT	DESIGNER OUT	LI A3A		LI A3B		PERCENT IND
		IN	DESIGNER IND	IN	DESIGNER IND	
C"	10.05	10.05	0	10.05	0	0
6C"	20.07	20.07	48	20.07	5.3	5.3
12C"	30.02	30.02	10.2	30.02	10.4	10.4
18C"	40.04	40.04	15.0	40.04	15.3%	15.3%
24C"	50.00	50.00	20.0	50.00	20.0	20.0

REMARKS: TEMPERARY REPLACEMENT FOR LT-A3

Maximum Allowable Error Not Used

TEST EQUIPMENT USED

SER. NO.	MODEL NO.	TEST EQUIPMENT USED	LAST CAL.	CAL. FREQ.
	PP-M138		1-17-75	1 Year
	177		4-25-75	3 Mos

PERFORMED BY: ESBURY, STEVEN, HANKE

APPROVED BY: Wilson

DATE: 5-10-75

DATE: 5-13-75

(g) When conducting tests at low metal temperatures on ferritic materials, precautions shall be taken to avoid brittle fractures. It is recommended that the fluid temperature be not less than 60°F where practicable. Where the resistance to brittle fracture at low temperature has not been enhanced, test temperatures above 60°F may be useful in minimizing risk of brittle fracture during hydrostatic or pneumatic tests. The test pressure shall not be applied until the piping and the testing medium are at approximately the same temperature.

1-737.4 Test Pressure

1-737.4.1 Hydrostatic Tests

(a) The test pressure for the piping shall not exceed the maximum test pressure of any vessels or components in the piping system.

(b) Except as otherwise permitted in Paragraph 1-737.1.2, completed systems shall be subjected to a hydrostatic test pressure that at every point in the piping system is not less than 1.25 times the design pressure multiplied by the lowest ratio (for materials of which the piping is constructed) of the allowable stress intensity value, S_m , for the test temperature of the system to the allowable stress intensity value, S_m , for the design temperature (see Paragraph 1-701.3.2; for S_m values see Table A.1 of Appendix A).

(c) If the minimum test pressure defined in (b) above is to be exceeded at any point in the piping system by more than 6%, the upper limit shall be established by the design engineer using an analysis which includes all loadings that

may exist during the test. The calculated primary membrane stress intensity shall not exceed 90% of the tabulated yield strength at the test temperature or a primary membrane plus primary bending stress intensity of 135% of the tabulated yield strength at the test temperature.

(d) The hydrostatic test shall be maintained for a minimum total time of ten minutes.

1-737.4.2 Pneumatic Tests

(a) A preliminary test at a pressure not exceeding 25 psig is recommended to locate major leaks.

(b) Special precautions shall be taken to prevent injury to personnel because of the hazard of testing pneumatically.

(c) The pneumatic test shall be maintained for a minimum total time of ten minutes.

(d) The pneumatic test pressure shall be not less than 1.20 nor more than 1.25 times the design pressure of the system multiplied by the lowest ratio (for the materials of which the piping is constructed) of the allowable stress intensity value, S_m , for the test temperature of the system to the allowable stress intensity value, S_m , for the design temperature (see Paragraph 1-701.3.2; for S_m values see Table A.1 of Appendix A).

(e) The test pressure of a completed system shall not exceed that value which results in a calculated primary membrane stress intensity of 90% of the tabulated yield strength at the test temperature or a primary membrane plus primary bending stress intensity of 135% of the tabulated yield strength at the test temperature.

be subjected to the test pressure have been disconnected or isolated by valves or other suitable means.

1-737.1.2 Pneumatic Tests

A pneumatic test may be applied as a preliminary to a liquid test to locate major leaks, or it may be substituted for a liquid test as provided in Subdivision 1-737.1. The pneumatic test shall also conform to the provisions of Subdivision 1-737.3 and Paragraph 1-737.4.2.

(a) The pneumatic test* prescribed herein may be used in lieu of the hydrostatic test prescribed in Paragraph 1-737.4.1 only

1. for systems that are so designed and/or supported that they cannot safely be filled with water (The test of such systems may be made with the piping partially filled with water if desired.), or

2. for systems not readily dried that are to be used in services where traces of the testing liquid cannot be tolerated and, where possible, the parts of the system have been previously tested by hydrostatic pressure to the pressure required in Paragraph 1-737.4.1.

(b) The pressure in the system shall gradually be increased to not more than one-half of the test pressure, after which the pressure shall be increased in steps of approximately one-tenth of the test pressure until the required test pressure has been reached. The pressure shall then be reduced to a value equal to the greater of the design pressure or three-fourths of the test pressure and held for a sufficient time to permit examination of the system in accordance with Subparagraph 1-737.1.1(a).

(c) The test pressure shall not be applied until the system and the pressuring medium are at about the same temperature.

(d) The test equipment shall be examined before pressure is applied to ensure that it is tight and that all appurtenances that should not be subjected to the test pressure have been disconnected or isolated by valves or other suitable means.

(e) The gas used shall be non-flammable.

1-737.1.3 Mass Spectrometer and Halide Leak Tests

When a mass spectrometer or a halide leak test is required as provided in Subdivision 1-737.1, it shall conform to the provisions of Subdivision 1-737.3 and shall be in accordance with the instructions of the manufacturer of the test equipment. In all cases a calibrated reference leak with a leak rate not greater than the maximum permissible leakage from the system

*Compressed gas is hazardous when used as a testing medium. It is, therefore, recommended that special precautions be taken when gas is used for test purposes.

shall be used. The equipment shall be calibrated against the reference leak in such a way that the system leakage measured by the equipment can be determined to be not greater than the leak rate of the reference leak.

1-737.2 Pressure-Test Gauges

(a) Pressure-test gauges used in testing shall be indicating pressure gauges and shall be connected directly to the piping. If the indicating gauge is not readily visible to the operator controlling the pressure applied, an additional indicating gauge shall be provided where it will be visible to the operator throughout the duration of the test. For systems with a large cubical content, it is recommended that a recording gauge be used in addition to the indicating gauges.

(b) Indicating pressure gauges used in testing shall preferably have dials graduated over a range of about double the intended maximum test pressure, but in no case shall the range be less than 1 1/2 nor more than 4 times that pressure.

(c) All gauges shall be calibrated against a standard dead-weight tester or a calibrated master gauge prior to each test or series of tests. Gauges shall be recalibrated at least every six months.

1-737.3 Test Preparation

(a) All joints, including welds, are to be left uninsulated and exposed for examination during the test. If a joint has been previously tested and accepted, it may be insulated or covered. Such joints need not be re-exposed for subsequent tests.

(b) Piping designed for vapor or gas shall be provided with additional temporary supports, if necessary, to support the weight of the test liquid.

(c) Expansion joints shall be provided with temporary restraints if required for the additional pressure load under test, or they shall be isolated from the test.

(d) Equipment that is not to be subject to the pressure test shall be either disconnected from the piping or isolated by a blank (lugs or similar means). Valves may be used if the valve with its closure mechanism is suitable for the proposed test pressure.

(e) Flanged joints at which blinds are inserted to blank off other equipment during the test need not be tested.

(f) If a pressure test is to be maintained for a period of time and the test fluid in the system is subject to thermal expansion, precautions shall be taken to avoid excessive pressure. A small relief valve set to 1 1/3 times the pressure is recommended during the pressure test.

1-736.5.1 Visual Examination

Visual examination is observation of materials, surfaces, or a component or weld that may or may not be exposed to such other conditions as before, during, and after manufacture, fabrication, assembly, installation, nondestructive examination, and tests. This examination shall include verification of dimensional, fitup, and weld preparation requirements of the design.

(a) The vision of the examining personnel, the lighting, and the visual inspection aids employed for visual examination in accordance with this Code shall at least be adequate to permit the examining personnel, with or without corrective eyeglasses, to distinguish unacceptable imperfections specified for materials in Division 1-723 and for welds in Subparagraph 1-727.4.2(e).

(c) Elimination or repair of unacceptable defects in materials determined by visual examination shall be in accordance with Paragraphs 1-724.1.6 or 1-724.1.7, respectively. Repair of defects or imperfections in welds shall be in accordance with Subdivision 1-727.7.

1-736.5.2 Radiographic Examination of Welds

Whenever required by this Code, radiographic examination of welded joints shall be performed by the methods given in Appendix B-1 and welds shall meet the acceptance standards in Appendix B-1 except as otherwise specified in the Code.

1-736.5.3 Ultrasonic Examination of Welds

Whenever required by this Code, ultrasonic examination of welds shall be performed by the methods given in Appendix B-2, and the welds shall meet the acceptance standards of Appendix B-2 except as otherwise specified in the Code.

1-736.5.4 Magnetic Particle Examination

Whenever required by this Code, magnetic particle examination shall be performed by the methods given in Appendix B-3, and the material examined shall meet the acceptance standards of Appendix B-3 except as otherwise specified in the Code.

1-736.5.5 Liquid Penetrant Examination

Whenever required by this Code, liquid penetrant examinations shall be performed by the methods given in Appendix B-4, and the material examined shall meet the acceptance standards of Appendix B-4 except as otherwise specified in the Code.

1-736.6 Type and Extent of Examination Required

The types and extent of examinations required for nuclear piping are summarized in Tables A.7(a), A.7(b), and A.7(c) in Appendix A.

1-736.7 Examination of Other Pressure-Retaining Components

Components designed in accordance with Subdivision 1-704.7 shall be examined as required by this Code for materials and fabrication methods used and shall be examined to ensure compliance with all requirements of Subdivision 1-704.7 as specified by the design.

1-737 LEAK TESTS**1-737.1 General**

(a) All piping installed under this Code shall be tested by a hydrostatic test prior to initial operation to demonstrate leak tightness. Where a hydrostatic test is not practicable, a pneumatic test may be substituted. There shall be no detectable leakage for satisfactory performance of the tests.

(b) Systems with conditions of operation and design that require leak tightness of a greater degree of sensitivity than can be obtained by a hydrostatic or pneumatic test shall be leak tested by other methods, such as helium mass spectrometer leak test or halide leak test, which have the required sensitivity.

1-737.1.1 Hydrostatic Tests

When a hydrostatic test is conducted, it shall conform to the provisions of this paragraph, Subdivision 1-737.3, and Paragraph 1-737.4.1.

Water is generally used for a hydrostatic leak test except where there may be damage due to freezing or where the operating fluid or piping material might be adversely affected by the test water. A hydrocarbon oil, such as kerosene, may be substituted for water if the flash point is over a temperature of 120 F and the freezing point is at least 25 F lower than the minimum ambient temperature.

(a) Following the application of the hydrostatic test pressure for a minimum of 10 minutes, examination for leakage shall be made of all joints and connections and of all regions of high stress, such as regions around openings, and thickness-transition sections. This examination shall be made at a pressure equal to the greater of the design pressure or three-fourths of the test pressure, and it shall be witnessed by the examiner. Any leaks that are present shall be eliminated, after which the system shall be retested in accordance with these requirements.

(b) The test pressure shall not be applied until the system and the pressurizing medium are at about the same temperature.

(c) Vents shall be provided at all high points of the system in the position in which it is to be tested to purge air pockets while the system is filling. The test equipment shall be examined before pressure is applied to ensure that it is tight and that all low-pressure filling lines and other appurtenances that should not

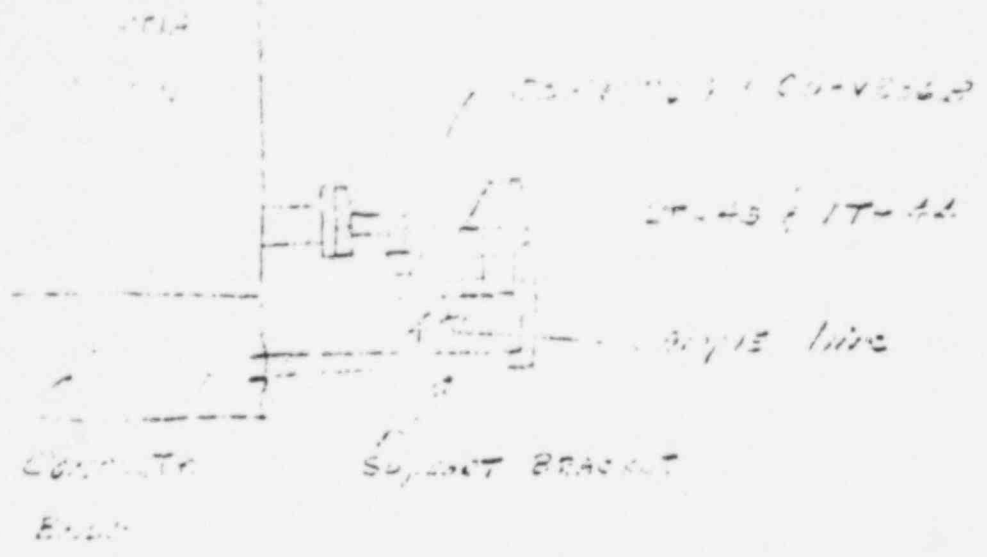


FIG 1.0

- ① All piping shall be made as short as possible for seismic & heat tracing purposes
- ② Support BRACKET should be bolted to TRANSDUCER and Tank base for seismic support
- ③ SO-VESSEL / VESSEL ARE already installed
- ④ Dimensions to be determined for pipe length in field.

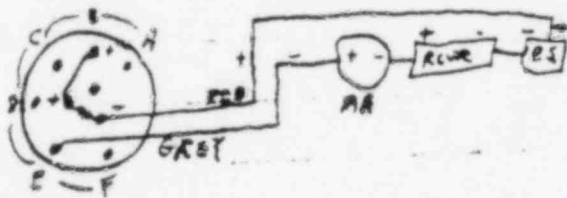
4.11 ~~THE INDICATOR AND PERFORM A LOOP CAL.~~
AND THE INDICATOR ON THE INLT PANEL

4.12 ~~CHECK IF NECESSARY.~~

8.7 HEAT TRACE THE TUBING AND TRANS
MITTER HOUSING.

8.8 REPEAT 8.2 THROUGH 8.7 FOR CO-T1B
AND CO-LT-44.

8.9 Inform shift supervisor when work
is done and correct level indication
is present.



9.0 PROCEDURE

9.1 PROCEDURE 2 FURBERG E-13 DM TRANSMITTERS.

CALIBRATE 0 TO 240" H₂O. HYDRO TO 15 PSI
PER USAS B31.7, 1-737, ~~HEAT AIR.~~ HW

9.2 ISOLATE AND REMOVE THE TEMPORARY LEVEL
GAUGE FROM CO-T1A.

9.3 ~~Go~~ HW MOUNT THE E-13 TRANSMITTER SO THAT
THE C/L OF THE ^{TRANSMITTER HIGH SIDE} PRESSURE TAP IS 7 1/2" BELOW
THE C/L OF CO-LT-43 TAP. (FIG 1.0)

9.4 REMOVE THE FUSE FOR CO-LT-43. DIS-
CONNECT THE LEADS AT CO-LT-43 AND CONNECT
THE LEADS TO THE TEMPORARY TRANSMITTER.

9.5 CONNECT THE TRANSMITTER HIGH SIDE
TO THE GAUGE LINE FROM 8.2, ~~HEAT AIR~~ HW

HW 1/4" OR 3/8" SS TUBING, AND ~~ADD~~ HW A TEST
HW FEE. OPEN THE ISOLATION VALVE AND VENT
THE HIGH SIDE. REMOVE THE PLUG FROM
THE LOW SIDE. INSTALL A RIGHT ANGLE
ADAPTER, POINTING DOWNWARD, TO PREVENT
DIRT ENTERING THE TRANSMITTER.
THE LOW SIDE WILL BE VENTED TO
ATMOSPHERE.

9.6 RE-INSTALL THE FUSE FROM SA. ~~THE~~ HW
~~CONTROL ROOM INDICATOR FOR CO-T1A SHOULD~~
HW READ THE SAME AS THE LEVEL GAUGE
HW PRIOR TO BE DISCONNECTED. CALIBRATE

PERFORM A LOOP CALIBRATION CHECK
OVER THE ATTACHED DATA SHEETS.

Work Request Form - Page 2 of 2
TMI Nuclear Station
Maintenance Procedure Format and Approval

7551

Part No. I

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form additional pages may be attached as required. Work Request Procedure A.P. 1016 Sect. 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.: INSTALL TEMPORARY TRANSMITTERS
2. Purpose:
TO RESTORE CONTROL ROOM CONDENSATE STORAGE TANK LEVEL INDICATION
3. Description of system or component to be worked on.
** C.C. LT-43/44, COND TANK LEVEL LIMITER
4. References:
4.1 FOXBORO 20-140 4.3 APIC 2
4.2 302-101 4.4 USAS 3317, 41-737, COPY ATT.
5. Plant Status or Prerequisite Conditions required for performance of work.
** ANY Inform shift supervisor prior to starting work.
6. Limits and Precautions:
(a) Personnel PER RCP 4.1
(b) Equipment NA
(c) Environment NA
(d) Nuclear NA
7. Special Tools, Materials and Qualifications required.
MOUNTING EQUIPMENT HEAT TRACE TAPE
TWO FOXBORO E13 LIMITERS
8. Detailed Procedure (attach additional pages as required)
ATTACHED
9. Post Maintenance Testing required and Acceptance Criteria:
TRANSMITTERS CALIBRATED TO 240" & INSTALLED 7.5' BELOW
BASELINE TAP FOR EXISTING C.C. LT-43/44 TRANSMITTERS TO BE RECEIVED
AND EXISTING C.C. LT-43/44 RECONNECTED AFTER ISOLATION VALVES INSTALLED.
GPU Test Superintendent approval of test (during S/U only) NA

Supervisor of Maintenance recommends approval V.P. Orlando 4/28/75 Date 4-24-75
*PORC recommends approval - Chairman C.E. Hartman Date 4-28-75

*Station Superintendent/Asst. Superintendent Approval J.J. Cull Date 4-28-75

*Note: These approvals required only on O.C. or Radiation Work Permit jobs.

**Note: These sections are not required to be filled in prior to use for generic procedures which are prepared before their need arises. These two sections may be approved prior to use by telephone call to the PORC Chairman and Superintendent/Assistant Superintendent.

Ralph
In April of 75 two Condensate
storage tank level transmitters
were found to be bad a temporary
installation of two transmitters
were installed and witnessed
by GC Mill Johnson. On Jan³ of
76 C/M 261 came out to make
this installation permanent and
to blank off old transmitter lines.
this was accomplished. Units
were tested and system returned
to normal.

JCS

J. C. Cottis
5/1/77

617FM

Work Request Form - Page 1 of 2
TMI Nuclear Station
Work Request Approval

Work Request No. 7552
Priority 1A

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

T8004 531.2

Items 1 thru 5 completed by Originator

- 1. System: CONDENSATE
- 2. Component: CP-LT-43 / CP-LT-44
- 3. Describe malfunction or modification and recommended corrective action.
INSTALL FIXED EIB DIM TRANSMITTERS ON GAUGE LINES FOR THESE TRANSMITTERS. CONNECT EIB OUTPUTS TO NORMAL CURRENT LINES
- 4. Originator: W. Wilson Date: 2-21-75 Orig.'s Dept. Head's Signature: W. Wilson
J. L. Harper

Items 6 thru 12 completed by Supervisor of Maintenance or Designee

- 5. Does work represent a change or modification to an existing system or component? Yes No
If item 5, is yes, the work must be approved via the change/modification procedure before work can be performed. Notify Technical Services for assistance. (See A.P. 1016, Sect. 7.0) **CHANGE/MOD.**
- 6. Does work require a Radiation Work Permit? **APPROVED**
- 7. If item 7, is yes, the work must be performed using a PRC reviewed, Station Superintendent approved procedure.
- 8. Is work on a Q.C. component? (See 6.27-55-50 - Quality Assurance Systems List) Yes No
If item 8, is yes, the work must be performed using a PRC reviewed, Station Superintendent approved procedure and the Quality Control Department must review the Work Request. Quality Control Dept. W. E. Potts 4/29/75
- 9. List support required from Station Technical Services Department or Generation Engineering Department.
- 10. Estimated manhours to perform job: E. _____ IC. 20 M. _____ R. _____
- 11. Maintenance Foreman Assigned: Wilson
- 12. Supervisor of Maintenance approval to commence work: D. Shaulin Ddt Date 4-29-75
- 12A. GPU Shift Test Engineer Approval (during S/O only) NA Date 5-5-75
- 13. Shift Foreman's approval to commence work: Post Date 5-5-75
Tagging Application No. NA
Radiation Work Permit No. NA

14. Maintenance Foreman's comments on work performed: INSTALLED TRANSMITTERS AND WIP-CHECKED 5-13-75 W. Wilson. Removed flange and installed blank flange.
Work completed - Maintenance Foreman's Signature: W. Wilson

- 15. Work completed and component aligned for testing. Shift Foreman's signature: Post Date: 4-25-77
- 16. Testing completed and component released for normal use. Shift Foreman's signature: W. Wilson Date: 4-25-77
- 17. Quality Control Department review of work and testing completed Q.C. Work only. Q.C. Dept. W. E. Potts Date 5/1/77
- 18. Supervisor of Maintenance: Work Request and procedure are complete and signed off as required. Change/Modification form has been signed-off as required. Machinery history entry has been made, if required.
Actual Manhours to perform job: 20 Supervisor of Maintenance Signature: W. Wilson Date: 5-11-77

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required. Tagging Application No. _____ Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

_____	_____
Work Completed - Maintenance Foreman's Signature	Date/Time

20. Work completed and component aligned for testing.

If S.F. signature _____
Initial not required. Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

If S.F. signature _____
initial not required. Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

_____	_____
QC Department	Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

_____	_____	_____
Actual Manhours to perform job	Supervisor of Maintenance Signature	Date

290 Cancel

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1

Work Request No. 20801

Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Priority 1a

W.O./Account No. T8053/580.2 NPRD Form Req'd. No

I

Items 1 through 5 completed by originator

1. System: Reactor Coolant pumps

2. Component (name & number) #1 SEAL LEAKOFF RECORDER

3. Describe malfunction or modification and recommended corrective action.
check alarm switch and relay - alarm keeps coming in for no reason.

4. Originator: L. Nale Date/Time: 7-22-77/1337

5. Originator's Supervisor's Signature L. Nale / G. K. Under

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes _____ No

7. a. Does the work require a Radiation Work Permit? Yes _____ No
b. Is an approved procedure required to minimize personnel exposure? Yes _____ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work.
Yes No _____

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes _____ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

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cc1

- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

Valve replaced with no leaks under pressure

14. Estimated manhours to perform job: E _____ IC _____ M 8 U _____

15. Maintenance Foreman Assigned: Shift

16. QC Dept. review, if required in item No. 8 N/A Date _____

17. Supervisor of Maintenance approval to commence work: W. Metz Date 4-12-77

18. Shift Foreman's approval to commence work Book Date 4/6/77

Initial of Shift Foreman 804 Tagging Application No. _____ Radiation Work Permit No. NA

19. Maintenance Foreman's comments on work performed:

*Installed new valve, I & C Dept needs to set same.
H. Stambough 7-6-77 (8 hr)*

[Signature]

12-6-78

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature Initial not required.

Shift Foreman's Signature Date

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21. Testing completed and component released for normal use.

If S.F. signature initial not required.

Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).

N/A
QC Department Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

14.5 hrs. KC 2
Actual Manhours to perform job

[Signature]
Supervisor of Maintenance Signature

12-14-78
Date

EC 2

WORK REQUEST APPROVAL
TMI Nuclear Station

~~19616~~

Unit No. I
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 19616
Priority 2A

W.O./Account No. 78005/532.2 NPRD Form Req'd. No

M/IC

Items 1 through 5 completed by originator

- 1. System: Fire Service Water
- 2. Component (name & number) FS-V-264 (Filtered water from clearwell-pressure modulator)
- 3. Describe malfunction or modification and recommended corrective action.
Physically located in base of altitude tank.

The bottom half of one connection has sheared off. Entire valve must be replaced.

4. Originator: Earl F. Gee Date/Time: 11 April 77/1710

5. Originator's Supervisor's Signature EFG for F.H. Erice

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
- 7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
- 9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent _____

Date _____

11. Plant status or Pre-requisite conditions required for performance of work.

operating or shutdown

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CCI

- (1) 1 1/2 ton Conestoga
- (2) 5 ton beam clamps
- (2) 1" shackles
- (1) 3/8" Allen wrench

hand held inspection mirror
spirit tool.

- 6.8 Close Floor OF Pig, REMOVE hook ROD AND
INSTALL Lid.
- 6.9 Remove Lead Pig ~~TO OUT-LEVEL~~ AND PLACE ON
dolly. H.P. Supervisor WILL DESIGNATE APPROPRIATE
STORAGE AREA AND POST NECESSARY RADIATION
SIGNS.
- 6.10 ON Lower "O" RING OF NEW filter cartridge
PLACE A LIGHT COAT OF DOW CORNING 200 Lubricant
- 6.11 USING hook ROD Lower NEW filter cartridge
INTO filter housing
- 6.12 Push down ON top OF cartridge. WITH A force
OF APPROXIMATELY 30 LBS TO SEAT "O" RING IN PLACE
- 6.13 WITHDRAW hook ROD FROM cartridge AND USE IT
TO SWING Lid INTO PLACE
- 6.14 SWING ^{Lid} ~~hook~~ BOLTS INTO POSITION
- 6.15 SNUG UP ^{Lid} ~~hook~~ BOLTS AND REMOVE long HANDLE
WRENCH
- 6.16 try LINE UP ~~the~~ FILTER for service AND
check for LEAKS Repeat step ^{6.15} ~~step~~ if necessary

1.0 Procedure

- 6.1 ISOLATE FILTER AND INSURE IT IS VENTED AND DRAINED
CAUTION: INSURE VENT VALVES REMAIN CLOSED ONCE FILTER COVER IS REMOVED
- 6.2 MOVE LEAD PIG INTO POSITION TO BE HOISTED
- 6.3 ATTACH LIFTING DEVICE TO HOIST, ~~RAISE PIG AND SET ON LANDING~~ AND PREPARE TO SET IN PLACE
- 6.4 USING LONG HANDLE WRENCH LOOSEN TOP COVER BOLTS. INSURE THIS STEP IS DONE WITH SPOT LIGHT SHINING ON FILTER AND A MIRROR IN POSITION
- 6.5 SWING BOLTS CLEAR OF FILTER TOP AND SWING OPEN FILTER TOP. H.P. SURVEY WORK AREA. CONTINUOUS H.P. COVERAGE REQUIRED FROM THIS STEP UNTIL COMPLETION OF PROCEDURE.
- 6.6 PLACE LEAD PIG IN PLACE OVER ACCESS HATCH. IF NECESSARY USE STEEL BLOCKS TO LEVEL PIG. REMOVE LID FROM PIG
- 6.7 SLIDE OUT FLOOR OF PIG. INSERT HOOK TOOL THROUGH PIG AND WITH DRAW FILTER INTO PIG.

WORK REQUEST PROCEDURE
 TMI Nuclear Station
 Maintenance Procedure Format and Approval

Unit No d

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No

Filter Element Replacement

2. Purpose

Change filter Assy MU-F2A

3. Description of system or component to be worked on

Make up System

4. References:

4.1 TMI Unit #1 AP 1002 4.3 Procedure for Changing
 4.2 TMI Unit #1 AP 1003 MU-F2A

5. Special Tools, Materials and Qualifications required:

~~None~~ *5.1 Long handled tools, shipping cask*

6. Detailed Procedure (attach additional pages as required)

6.1 *Comply with refs. 4.1 and 4.2*
 6.2 *See attached procedure*

W Carter by phone 5-10-76 HSB
C Summers by phone 5-10-76 HSB

Director of Maintenance recommends approval *JM Shaver by phone HSB* Date *5-10-76*

*PORC Recommends approval - Chairman *C. Hartman by phone* Date *5-12-76 HSB*

*Unit Station Superintendent Approval *JJ Cady by phone* Date *5-12-76 HSB*

*NOTE These approvals required only on Nuclear Safety Related, Radiation work permit jobs.

W-15300

Quality Control

ACCEPT

Purchase Order 43506

Item No. 100

Q.C. Inspector [Signature]

Date 5/21/70

00:

WORK REQUEST APPROVAL
TMI Nuclear Station

1530

Unit No. F
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 15300
Priority LA

W.O. Account No. 15003/530.1 NPRO Form Req'd. _____

Items 1 through 5 completed by originator

1. System Mixing Unit
2. Component (name & number) Let down Pressure A MU-F2A
3. Describe malfunction or modification and recommended corrective action.
Logged by Change Management
to be fixed by maintenance

4. Originator: A.C. Johnson Date/Time: 7-2-78 1840

5. Originator's Supervisor's Signature: [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C.M. No. _____ Yes _____ No
7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes No _____
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No _____
9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes _____ No
10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

11. Plant status or Pre-requisite conditions required for performance of work.

JOB TICKET (WORK REQUEST)
REVIEW - CLASSIFICATION - ROUTING CONTROL FORM

JOB TICKET (WORK REQUEST) NUMBER 178

12. Retest met acceptance criteria

Yes No

13. Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

1-9-79

Date

Paul Henning

14. Work completed and component aligned for testing.

Initial if S. F. signature is not required.

Shift Foreman's Signature

Date

15. Testing completed and component released for normal use.

Initial if S. F. signature is not required.

Shift Foreman's Signature

Date

16. Quality Control Department review of work and testing completed (QC work only).

N/A
Surveillance Report No.

2-23-79
QC Department

8/8/79
Date

17. Supervisor of Maintenance Job Ticket (Work Request) and procedure are complete and signed off as required. Change/modification form has been signed off as required.

R. Santana
Supervisor of Maintenance Signature

8/10/79
Date

- 6.0 Procedure for repairing Fuel Handling Room Seal
- 6.1 Shift Supervisor / Shift Foreman to open Fuel Handling door.
- 6.2 Inspect door seal for damage.
- 6.3 If seal is not damaged, install clips over seal edge and tighten clips.
- 6.4 If seal is damaged, install new seal, install clips over seal edge and tighten clips.
- 6.5. Replace seal not to exceed 7 PSIG and test for leaks.

Supervisor of Maint.	<u>DM Shole</u>	<u>date</u>
Pres	<u>Edwin Culver</u>	<u>1-9-79</u>
Pres	<u>Henry B. Swenson</u>	<u>1-9-79</u>
Pres Chairman	<u>H. B. Wiley</u>	<u>1-9-79</u>
Unit Supt.	<u>CE Strommen</u>	<u>1-9-79</u>
"	<u>Robert P. [unclear]</u>	<u>1/9/79</u>

GENERATION CORRECTIVE MAINTENANCE SYSTEM
JOB TICKET FORM (WORK REQUEST)-THREE MILE ISLAND

Unit 1

COMPONENT DESIGNATION					LOCATION/UNIT	JOB TYPE	JOB TICKET NUMBER	REQUEST DATE								
SYS	7	8	COMP TYPE	11	12	15	16	17	22	23	24	25	29	32	33	38
TMI BLS 4					035001	CM	00178010	07	10	1989						

RECOMMEND PRIORITY

DESCRIBE MALFUNCTION OR MODIFICATION DESIRED

CAUSE OF MALFUNCTION (IF KNOWN)

FUEL HANDLING DOOR SEALS Ripped off AND HANGING DOWN Side of DOOR Needs repair AND REINSTALLATION

ORIGINATOR'S EMP NO. 06279	ORIGINATOR'S SIGNATURE <i>D. Snow</i>	DATE 11/7/89	SUPERVISOR'S EMP NO. 05257	SUPERVISOR'S SIGNATURE <i>[Signature]</i>	DATE 11/7/89
-------------------------------	--	-----------------	-------------------------------	--	-----------------

WORK ORDER NUMBER 0136000187E2	GC CODE 5303	ACCOUNT NUMBER 0100000	PLANT CONDITION SU OP HD CD RF HSLR	NPRO FAILURE YR MO DAY HR MIN
-----------------------------------	-----------------	---------------------------	--	----------------------------------

CHANGE MOD REQ D	NUC SAFETY	REG AGENCY CODE	CHNG MOD NUMBER	TAGGING APPLICATION NO	ENV CODE	OUTAGE CAUSE CODE	STATUS HOLD CODE	ESTIMATED DOLLARS
0	1	0			X	9-11		623

S/M APPROVAL COMMENCE WORK MO DAY YR	S/F APPROVAL COMMENCE WORK MO DAY YR	PROCEDURE NUMBER 010979	RESP LOCATION OR CONTRACTOR 1030M	EST CREW SIZE 03000	EST MANHOURS 120
---	---	----------------------------	--------------------------------------	------------------------	---------------------

ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS	ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS	ASSISTING DEPARTMENT RESP LOCATION OR CONTRACTOR EST CREW EST MANHOURS
---	---	---

TEN CD	JOB COMPLETION DATE MO DAY YR	FIELD WORK COMPLETION DATE MO DAY YR	SIGN OFF REASON CODE	TOTAL ACTUAL MANHOURS	PURCHASE REQUISITION NUMBER	PURCHASE ORDER NUMBER	MATERIAL ORDER NUMBER
807A	08	01	0979	1	00120		

39 - RESOLUTION DESCRIPTION

801A	07 Inspected seal, seal OK Pulled loose from
801A	08 clips Installed seal in clips and tighte
801A	09 ned clips inflated seal to 7 psig no
801A	10 Leaks

TEN CD	NPRO FAILURE END YR MO DAY HR MIN	FAILURE NO 48 49	FAILURE STATUS 50	ORIGINATOR - SUPERVISOR - SUPERVISOR OF MAINTENANCE - MAINTENANCE FOREMAN - JOB PERFORMER - MAINTENANCE FOREMAN - SUPERVISOR OF MAINTENANCE - CM COORDINATOR - DATA ENTRY - SUPERVISOR OF MAINTENANCE CM COORDINATOR - DATA ENTRY
808A				

TEN CD	NPRO FAIL TYPE	NPRO FAIL MODE	CAUSE OF FAILURE CODES A B	EFFECT OF FAILURE CODES A B	FAILURE DETECTION CODE 55 56 57 58	ACTION TAKEN CODES A B	LICENSE EVENT REPORTED DATE YR MO DAY
ROR A							

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AF1002, 1003
AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *Cable raised per drawing 215-192*
E _____ IC 48 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: RC Trentman Date 1-24-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

_____ Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature _____ Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature _____ Date

22. Quality Control Department review of work and testing completed (QC work only).

_____ Servisance Report No.

_____ QC Department _____ Date

23. Supervisor of Maintenance work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

_____ Actual Manhours to perform job

_____ Supervisor of Maintenance Signature

_____ Date

REFUEL

1026
Revision 0
07/22/77

Cancel Stamp
By originator

Unit 2

WORK REQUEST APPROVAL TMI Nuclear Station

Unit No. 1
W.O./Account No. 1000/100/201 NPRD Form Req'd No

Work Request No. 22576
Priority 10
M

Items 1 through 5 completed by originator

1. System: RR Refueling 1978

2. Component (name & number) fastoon cables

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Raise fastoon cables - Item #205
per drawing 215-192
& Lower Fastoon CABLES

4. Originator: Eamesh Date/Time: 11-16-77 - 0800

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
31.0
Shutdown

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1003
AND MET ED SAFETY MANUAL

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *Cable platform removed*
E _____ IC _____ M 20 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *PC Troutman* Date 1-24-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman _____
Tagging Application No. _____ Radiation Work Permit No. _____
signature is not required

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time Work Reviewed - Maintenance Foreman's Signature

_____ Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

_____ Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

_____ Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

cancel By
originator

REFUEL

Area # 2

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O. Account No. 18945/1200/520.1 NPRD Form Req'd Nil

Work Request No. 22575
Priority 10

M

Items 1 through 5 completed by originator

1. System: RC Refueling 1978

2. Component (name & number) Reactor Head

3. Describe malfunction and cause of malfunction (if known) or modification desired.

Remove cable Platform &

Item # M-220

REINSTALL

4. Originator: Edmond Date/Time: 11-16-77 - 1500

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

BEST COPY AVAILABLE

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

Shutdown

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
OF THE H IN AP1002, 1003
AND RELATED SAFETY MANUAL

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 8 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: RC Trotman Date 1-24-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

1238 _____ QC Department _____ Date _____
Surveillance Report No.

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AF1002, 1003
AND MET ED SAFETY MANUAL

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria

14. Estimated manhours to perform job: *Missile shell removed*
E IC M 40 U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *RC Trentino* Date 1-24-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

1238
Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

REFUEL

1026
Revision 0
07/22/77

*Cancel
by
originator*

Area #2

WORK REQUEST APPROVAL TMI Nuclear Station

Unit No.
W.O./Account No. TRAS/650/520.1 NPRD Form Req'd No

Work Request No. 2257
Priority 10
M

Items 1 through 5 completed by originator

1. System: R.C. Refueling 1978

2. Component (name & number) Missile shields

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Remove missile shields - Item M-203
REINSTALL " "

4. Originator: Cancel Date/Time: 11-16-77 - 0800

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. Yes No

7a. Does work require an RWP Yes No

7b. Is an approved procedure required to minimize personnel exposure. Yes No

8a. Is work on a QC component as defined in GP 1008. Yes No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 102? Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

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Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
31.0

shut down

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1003
AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *Catwalk removed* E _____ IC _____ *M32* U _____

15. Maintenance Foreman Assigned: *e.* _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *RC Trotman* Date *1-24-78*

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Supervisors Approval No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

REFUEL

1026
Revision 0
07/22/77

*cancel By
originator*

Area #2

WORK REQUEST APPROVAL TMI Nuclear Station

Unit No.
W.O./Account No. 18965/6050620.1 NPRD Form Req'd No

Work Request No. 22571
Priority LD
M

Items 1 through 5 completed by originator

1. System: RS Refueling 1978

2. Component (name & number) catwalks

3. Describe malfunction and cause of malfunction (if known) or modification desired.

*Remove catwalks Item # 204
↑ & REINSTALL
FTC*

4. Originator: *cancel* Date/Time: 11-16-77 - 0900

5. Originator's Supervisor's Signature *J. H. Stamborg*

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
31.0

Shutdown

BEST COPY AVAILABLE

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

CONFORM WITH THE PROVISIONS SET FORTH IN APL008, 1003 AND REE ED SAFETY MANUAL

13. Post Maintenance Testing required and Acceptance Criteria no tests

14. Estimated manhours to perform job: E IC M U

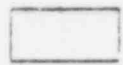
15. Maintenance Foreman Assigned: Snow

16. QC Dept. review, if required in item No. 8

QC Supervisor N/A Date

17. Supervisor of Maintenance approval to commence work: McCurdy Date 10/23/78

18. Shift Foreman's approval to commence work R.E. Boyer Date 2-7-80



Initial if Shift Foreman signature is not required

4994
Tagging Application No.

N/A
Radiation Work Permit No.

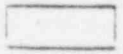
19. Comments on work performed: welded valve body and ground
bonnet seating surface. Lapped valve to get
seal also.

Retest met acceptance criteria Yes No

Work Performed by date/time
Newton
D. Russo

Work Reviewed - Maintenance Foreman's Signature
McCurdy
Date 2/11/80

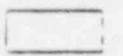
20. Work completed and component aligned for testing.



Initial if S.F. signature is not required.

R.E. Boyer
Shift Foreman's Signature Date 2-14-80

21. Testing completed and component released for normal use.



Initial if S.F. signature is not required.

Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. QC Department Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job. Supervisor of Maintenance Signature Date

REWORK

~~Handwritten scribbles~~

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account: ~~255-127~~ T3721 / S30.7
NPRD Form Req'd No
Work Request No. 255-1
Priority 10
M

- Items 1 through 5 completed by originator
- System: Feed Water
 - Component (name & number) FW-V-43 (Furmented)
 - Describe malfunction and cause of malfunction (if known) or modification desired.

Repair Furmented Valve

Item 17014

4. Originator: Muck Date/Time: 10-23-78 0915

5. Originator's Supervisor's Signature Pat for OMSholer

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes _____ No
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No _____
9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

SHUT Down

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E IC M U

No leaks under operating pressure

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *[Signature]* Date 6-1-78

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman _____

Tagging Application No. _____

Radiation Work Permit No. _____

signature is not required

19. Comments on work performed:

...

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

CANCEL
PURCH
12-3-79
25234

410

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. 1003/1001/630.7 NPRD Form Req'd No

Work Request No. 24073
Priority 2D
M

Items 1 through 5 completed by originator

1. System: Feed water

2. Component (name & number) FW-V 43

3. Describe malfunction and cause of malfunction (if known) or modification desired.
FW-V 43 Body to bonnet leak. Feedwater Header 2nd floor - turbine Bldg, Near F.W. pumps

4. Originator: A. L. Roberts Date/Time: 5/31/78 1935

5. Originator's Supervisor's Signature A. L. Roberts

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No /

7a. Does work require an RWP Yes _____ No /

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No /

8a. Is work on a QC component as defined in GP 1008. Yes _____ No /

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No /

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

shut down

BEST COPY AVAILABLE

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E 5 IC 0 M 5 U 0

15. Maintenance Foreman Assigned: Blodman

16. QC Dept. review, if required in item No. 8

QC Supervisor NA Date NA

17. Supervisor of Maintenance approval to commence work: R. Fontana Date 8-2-78

18. Shift Foreman's approval to commence work C. Blodman Date 6/18/78

Initial if Shift Foreman signature is not required

N/A
Tagging Application No.

N/A
Radiation Work Permit No.

19. Comments on work performed:

TOOK UP ON MSU 11 F SATISFACTORY
MSU 11 F NEEDS REPAIRED -
11 D, E, F Glands removed and cleaned. Packing retightened

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

8-22-79
Date

11 D Com

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

[Signature]
Shift Foreman's Signature

8-22-79
Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

[Signature]
Shift Foreman's Signature

8-22-79
Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department MA Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job 5

[Signature]
Supervisor of Maintenance Signature

8/24/79
Date

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. I
W.O./Account No. 18003/5308

NPRD Form Req'd No

Work Request No. 23687
Priority IA
M

Items 1 through 5 completed by originator

1. System: MAIN STEAM TURBINE BY PASS VALVES.
2. Component (name & number) MSV IIA E F F BY PASS VALVES.

3. Describe malfunction and cause of malfunction (if known) or modification desired.

BOTH, E F F BY PASS VALVES PACKINGS BLOW STEAM.

4. Originator: [Signature] Date/Time: 5/2/78 1045
5. Originator's Supervisor's Signature: [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No ✓

7a. Does work require an RWP Yes _____ No ✓

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No ✓

8a. Is work on a QC component as defined in GP 1008. Yes _____ No ✓

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No ✓

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work
Operating

BEST COPY AVAILABLE

SECRETARY 1953 1953

Lyons

The first of the following items is the summary
 of the work done during the year 1953.
 The second item is a list of the work done
 during the year 1953.
 The third item is a list of the work done
 during the year 1953.
 The fourth item is a list of the work done
 during the year 1953.
 The fifth item is a list of the work done
 during the year 1953.
 The sixth item is a list of the work done
 during the year 1953.
 The seventh item is a list of the work done
 during the year 1953.
 The eighth item is a list of the work done
 during the year 1953.
 The ninth item is a list of the work done
 during the year 1953.
 The tenth item is a list of the work done
 during the year 1953.

24319

12. Limits and Precautions: **COMPLY WITH THE PROVISIONS SET FORTH IN AP1002, 1008 AND MET ED SAFETY MANUAL**
- a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 6 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required _____
Tagging Application No.

_____ Radiation Work Permit No.

19. Comments on work performed:

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Retest met acceptance criteria Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

ATTACHMENT NO. 1

Cancelled See WR 24319

1026
Revision 0
07/22/77

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. 18003/530.1 NPRD Form Req'd No

Work Request No. 21187
Priority 2A

M

Items 1 through 5 completed by originator

- 1. System: Chemical addition
- 2. Component (name & number) CA-V-2

3. Describe malfunction and cause of malfunction (if known) or modification desired.

Manual operator is off. Chan replace.

4. Originator: Book Date/Time: 8/3/77 2035

5. Originator's Supervisor's Signature Book/Kinder

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
3/1/77 C/M No. _____ Yes _____ No

7a. Does work require an RWP _____ Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

BEST COPY AVAILABLE

11. Plant status or prerequisite conditions required for work. 31.0

O. K. ...

AP 1016

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

**COMPLY WITH THE PROVISIONS
SENT THROUGH IN #1002, 1003
AND NRP ED SAFETY MANUAL**

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 6 U _____

15. Maintenance Foreman Assigned: Snow

16. QC Dept. review, if required in item No. 8 _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial of Shift Foreman _____
signature is not required.

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:

Work Completed - Maintenance Foreman's Signature

Date/Time

20. Work completed and component aligned for testing.

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

Testing completed and component released for normal use.

If S.F. signature

initial not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

QC Department

Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

Cancelled See WR 24319

WORK REQUEST APPROVAL
TMI Nuclear Station

BW

Unit No. 1

Work Request No. 20717

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority 2A

W.O./Account No. 18003/530.1 NPRD Form Req'd. No

M

Items 1 through 5 completed by originator

1. System: GAS & LIQUID SAMPLING

2. Component (name & number) CA-V2

3. Describe malfunction or modification and recommended corrective action.

HARD WHEEL WORKS HARD.
FOUND WOODRUFF KEY BROKEN.
BOIT THAT HOLDS HARD WHEEL SECURE
IS BROKE. Aux Bldg 305' Near CRD filters

4. Originator: Tom Naimy Date/Time: 7/14/77 0400

5. Originator's Supervisor's Signature D. H. [Signature] for G.A.K.

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes _____ No

7. a. Does the work require a Radiation Work Permit? Yes No _____

b. Is an approved procedure required to minimize personnel exposure? Yes No _____

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work.
Yes No _____

9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes _____ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent

Date

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11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown

12. Limits and Precautions:
- a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1003
AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift

Foreman

signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Supervisor of Maintenance Tagging No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

Cancelled See WR 24319

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. 1
W.O./Account T8003/1001 530.1 NPRD Form Req'd No Work Request No. 25107
Priority IA

Items 1 through 5 completed by originator E/m

1. System: Sampling Liquid & Gas
2. Component (name & number) CA-V2

3. Describe malfunction and cause of malfunction (if known) or modification desired.
CA-V2 does move pneumatically but limit switch Arm is worn & valve doesn't indicate open. Manual handwheel is loose & Retaining Nut is sheared off in shaft. Located in Aux Building

4. Originator: D. J. Palant Date/Time: 9-4-78 1145

5. Originator's Supervisor's Signature D. J. Palant

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).
1420-4-3
rev. 0
10/21/77

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
operating

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WORK REQUEST APPROVAL
TMI Nuclear Station

M-1046

Unit No.
W.O./Account No. 8062/530.7
T8062/6127/530.7

NPRD Form Req'd No

Work Request No. 21532
Priority Emergency TD
m

Items 1 through 5 completed by originator

- 1. System: Feedwater
- 2. Component (name & number): TD-V233B Feedwater Pump 1B HP Stop Valve
- 3. Describe malfunction and cause of malfunction (if known) or modification desired. Below seat drain shut off.

This valve has blown packing.
TD-V23A
See: R-Bools

Repair TO-V23B
" " 16B
" " 17B
Repair bonnet MS-ST-7B
Date/Time: 10/4/77 1447

- 4. Originator: Bools
- 5. Originator's Supervisor's Signature: Bools/Kuder

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes _____ No
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No
- 9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

- 11. Plant status or prerequisite conditions required for work.
31.0
shutdown

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TMI UNIT _____
 INST. CAL. DATA SHEET

MTX _____

SYSTEM _____

INST. NO. CA P1 906

LOCATION _____

SERIAL NO. _____

TOLERANCE _____ ENG. UNIT
 OR
 % OF SPAN

MODEL OR TYPE Marsh

FUNCTION Inlet Pressure

MAX. ERROR OF % OF SPAN _____

RANGE 0-100 Psig

MAX. ERROR OR
 ENG. UNITS _____

OUTPUT _____

STATIC PRESSURE ERROR _____

ACTION _____

REFERENCE DATA GAI C302671

SPECIAL DATA 371-011-0650-0

CALIB.	INPT	Desired	Actual						
1	0	0	0						
2	25	25	25						
3	50	50	50						
4	75	75	75						
5	100	100	100						
6									

REMARKS:

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TEST EQUIPMENT USED

EQUIP. <u>Heise</u>	SER. NO. <u>11845</u>	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE _____ INITIALS _____

PERFORMED BY W. Brown DATE 9/5/79 APPROVED BY B. Kalenitch -- 9-4-79

TMI UNIT _____
 INST. CAL. DATA SHEET

MTX _____

SYSTEM _____
 LOCATION _____
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 % OF SPAN _____
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. CA-F1-388B
 SERIAL NO. _____
 MODEL OR TYPE DWYER
 FUNCTION _____
 RANGE 100-1000 CFM
 OUTPUT _____
 ACTION DIRECT INDICATION

REFERENCE DATA GAI-C-302-671

SPECIAL DATA 3/2 254-960-4000-1

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CALIB.										
1										
2										
3										
4										
5										
6										

REMARKS: FUNCTIONAL TEST SAT.

TEST EQUIPMENT USED

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE _____ INITIALS _____
 PERFORMED BY W. Bongard DATE 9/2/79 APPROVED BY [Signature] --9-4-79

TMI UNIT _____
 INST. CAL. DATA SHEET

MTX _____

SYSTEM _____
 LOCATION _____
 TOLERANCE _____ ENG. UNIT _____
 _____ OR _____
 _____ % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. CA-F1-388A
 SERIAL NO. _____
 MODEL OR TYPE DWYER
 FUNCTION _____
 RANGE 100-1000 ft/min
 OUTPUT _____
 ACTION DIRECT INDICATION

REFERENCE DATA GAI-C-302-671

SPECIAL DATA 254-960-4000-1

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CALIB.									
1									
2									
3									
4									
5									
6									

REMARKS: FUNCTIONAL TEST SAT

TEST EQUIPMENT USED

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE _____ INITIALS _____

PERFORMED BY W2 Bongol DATE 9/2/79 APPROVED BY [Signature] -- 9-4-79

TMI UNIT _____
 INST. CAL. DATA SHEET

MTX _____

SYSTEM _____
 LOCATION _____
 TOLERANCE _____ ENG. UNIT
 OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. CA-PI-907
 SERIAL NO. _____
 MODEL OR TYPE Ashcroft 2"
 FUNCTION SAMPLE PRESSURE
 RANGE 0-30 PSIG
 OUTPUT _____
 ACTION DIRECT

REFERENCE DATA GAI - C - 302 - 671

SPECIAL DATA 311 - 010 - 7000 - 0

CALIB.	INP +	Desired	Actual						
1	0	0	0						
2	5	5	5						
3	10	10	10						
4	15	15	15						
5	20	20	20						
6	25	25	25						

REMARKS: 30 30 30

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TEST EQUIPMENT USED

EQUIP. Heise SER. NO. 11840 LAST CAL. 5-11-79 CAL. FREQ. Ann
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE _____ INITIALS _____

PERFORMED BY W.D. Bonyak DATE 9/2/79 APPROVED BY [Signature] -- 9-4-79

TMI UNIT I
 INST. CAL. DATA SHEET

MTX _____

SYSTEM _____
 LOCATION _____
 TOLERANCE _____ ENG. UNIT
 OR
 % OF SPAN _____
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. CA-P1-906
 SERIAL NO. _____
 MODEL OR TYPE Ashcroft
 FUNCTION Inlet Pressure
 RANGE 0-30 PSIG
 OUTPUT _____
 ACTION DIRECT

REFERENCE DATA GAI - C - 302 - 671

SPECIAL DATA 311-010-7000-0

CALIB.	<u>Inlet</u>	<u>Desired</u>	<u>Actual</u>						
1	0	0	0						
2	5	5	5						
3	10	10	10						
4	15	15	15						
5	20	20	20						
6	25	25	25						

REMARKS: 30 30 30

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TEST EQUIPMENT USED

EQUIP. Heise SER. NO. 11840 LAST CAL. 5/1/71 CAL. FREQ. Ann
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE _____ INITIALS _____

PERFORMED BY WZ Boyd DATE 9/2/71 APPROVED BY [Signature] 9-4-71

ATTACHMENT 4

MINOR QC CHANGE MODIFICATION APPROVAL FORM

C/M Number 1096 Title Hayes Gas Analyzer Piping Mod.

Bases for determination that the change is minor. (Ref. GP 1003)

must not be a change to RPS or ESAS (SFAS)

1. The effect of this change on system operation is minor.
2. The necessary engineering is performed and was minor in scope.
3. This system is not to an Engineered Safeguards system.
4. No Tech Spec change is involved.
5. System is not Reactor Protection related.

Donald Suman
9/27/78

J.P. O'Hanlon 10/9/78
Unit Superintendent Approval/Date

Prepared by date
D. Suman 10-3-78

Concurrence of Manager Generation Engineering obtained by _____

From J. C. Kelly for RM Klingenstein Date 10-13-78

Tests or Retest:
Specified on site engineering C/M evaluation.

Note

Paperwork Changes shall include electrical schematics and piping physical drawings update to show "As Built" conditions.

Change Modification Package Approval

(Checklist completed. Yes)

J.P. O'Hanlon 10/18/78 N/A
Unit Superintendent Date Supervisor - QC Date

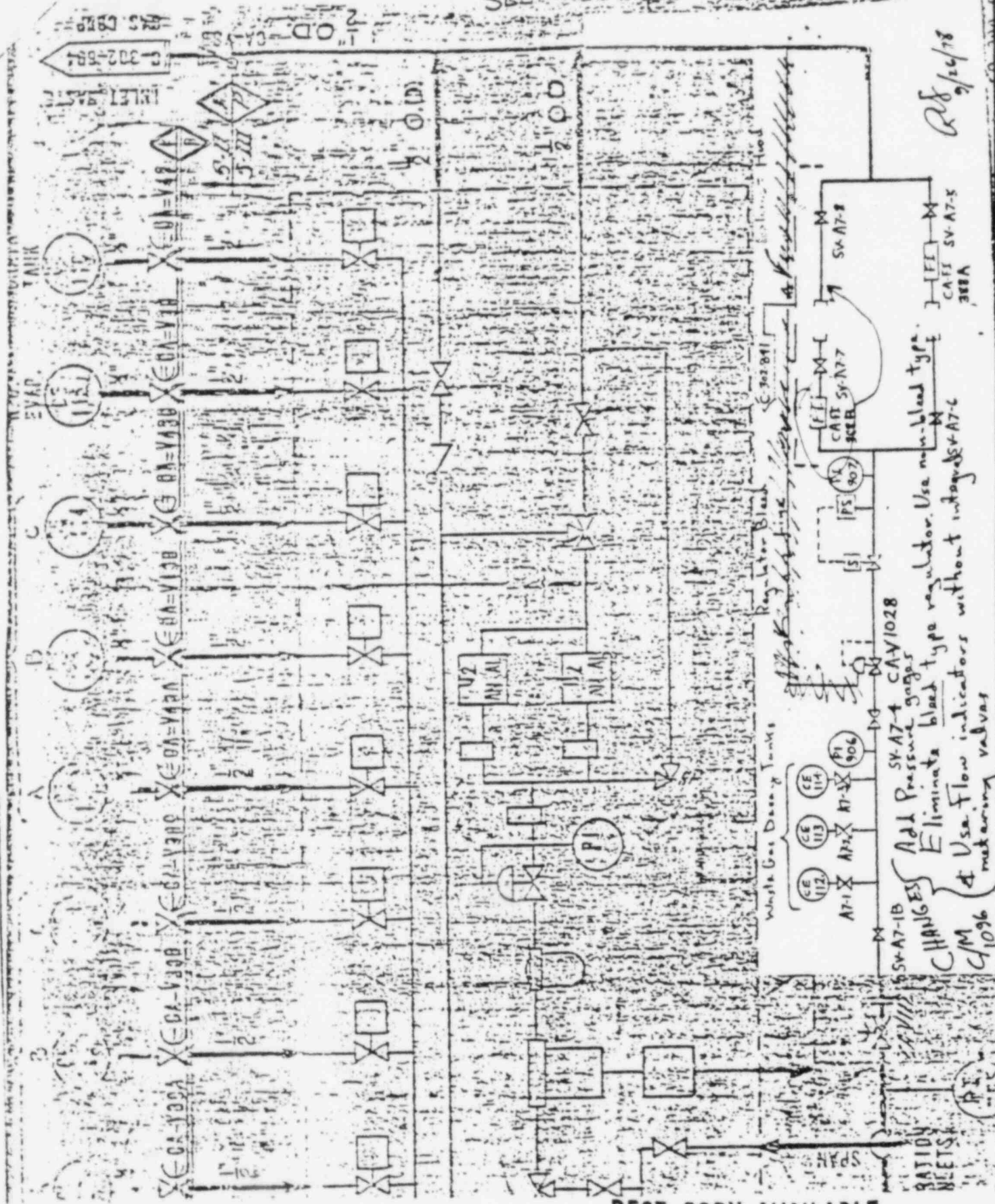
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EQUIPMENT SPECIFICATION

HAYES GAS ANALYZER PIPING MOD - C/M # 1096 Attachment # 2

		TAG #	
1	ea	Regulator 3-20 psig pressure 1/2" NPT Inlet/Outlet Panel Mounting Stainless Steel Body Handwheel Non-bleed Type No Internal Relief (Similar to Fisher Model 67S)	CA-V1028
2	ea.	Flowmeter 100-1000cc/min. air Without integral valve Dwyer Model #RMA-13	CA-FI388A/B
1	ea.	Gauge 0-30 psia pressure Size - 2" Back Connection Ashcroft Figure 1000	CA-PI 106/907
<p><i>PI 1000</i> <i>West</i> <i>Mist</i></p> <p><i>press on</i> <i>higher range</i> <i>9/27/78</i></p>		<p>NOTE: Equipment requisitioned 9/27/78 R. Summer</p> <p>Gauge 0-100 psig pressure Size - approx 2" Back Connection preferred</p>	<p>BEST COPY AVAILABLE</p> <p>CA-PI 900</p>

C/M #1096 Attachment #1
SECTION OF GAI DWG-C 302-6



Whole Gas Doses & Tanks
 SV-A7-1B SV-A7-4 CAV-1028
 A7-1 X A7-2 X A7-3 X PI-A7-1 906
 CE 112 CE 113 CE 114
 CHANGES: A7-1 Pressure gages
 Eliminates bleed type regulator. Use non-bleed type
 Use Flow indicators without integrator valves
 C/M #1096

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Safety Evaluation

The changes proposed herein have been evaluated to assure that they will not result in inadvertent release of sample gasses, in personnel injury, or equipment damage. There are several safety devices to prevent over-pressurization of fragile sample equipment. Also, the panel instrumentation will provide adequate indication of sample pressure and flow, for safe sampling.

Materials/equipment chosen is consistent with that used for the Hayes Gas Analyzer.

These changes will not, therefore, cause any increase in either the probability or seriousness of any nuclear safety-related incident.

Post-Maintenance Testing

1. Verify no sample panel leakage by pressurizing panel to approximately 23 psig with air/nitrogen and using snoop solution.
2. Verify sample flow easily controlled

Paperwork Changes

1. GAI C 302-671 Rev. 1 Show as-built
2. HP 1631 Modify sampling procedure
3. CP 1104-43 Modify sampling procedure
4. FSAR Figure 9-7

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Submitted by: *Robert L. Sumner*

Reviewed by: *W. P. Bailey* 10-3-78
Lead Engineer

Approved by: *J. P. O'Hanlon* 10-9-78
Unit Superintendent

ldh

Rev. changes PI 902 to 0-100 ps. range & notes that FI 385B is actually downstream of sample connections.

Not judged to be a significant change to the C/M. Can be covered by AS-Build. Submitted.

AS-Build
9/5/78

METROPOLITAN EDISON COMPANY

Subsidiary of General Public Utilities Corporation

Subject C/M #1096 Hayes Gas Sampling Panel Modification
Site Engineering Evaluation

Location TMI

Date September 27, 1978

Background

The chemistry department has always had difficulty drawing gas bomb samples from the Hayes Gas Analyzer⁴ to design problems with the sample piping. That piping was installed during startup and is not reflected by the system flow and piping print (GAI 302-671 Rev. 7).

The solenoid valves, provided to prevent over-pressure of glass sample bombs, cycle open and closed erratically while drawing gas samples. This cycling is caused mainly by a pressure regulator with improper range. Also, no pressure gages are presently provided on the sample panel to evaluate sampling conditions.

A change modification is necessary to make the system function properly, and, though there are other reasonable control schemes, the one proposed herein has been demonstrated to be workable.

Discussion

This change involves substitution of a non-bleed type pressure regulator in place of the existing bleed type, installing two additional pressure gages and substituting flow indicators without integral throttle valves. See attached specification sheet for the new equipment. All equipment will be panel mounted, readable and adjustable on face of panel.

Whereas gas flow control on the existing system is by adjustment of the needle valve at the inlet to the flow indicator, the flow on the new system will be regulated by adjustment of the pressure regulator. Prior to initiating flow, the valves downstream of the pressure regulator, including the inlet and outlet from the bomb, will be fully opened. This provides a flow path to the waste gas vent header which, in itself, prevents overpressure of the glass bomb provided flow is stopped prior to closing the bomb outlet. If the bomb outlet is inadvertently closed during flow the pressure switch will close the overpressure solenoid valve and/or the pressure regulator will close completely, in either case preventing bomb overpressurization.

The new pressure gages will indicate system conditions to help prevent improper valve lineups and expedite sample flow. Since it is not desirable to throttle at the flow regulators (for this chosen control scheme) new flow meters without integral valves are specified.

The new system design will be Seismic III/Nuclear III/15 psig/200° F with piping per GAI Line Spec. C-1.

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Change/Modification Request Form
TMI Nuclear Station
Safety Evaluation

Page 2 of 2

Unit No. 1

Change/Modification 1096

Work Request No. 23814

5. Nuclear Safety Evaluation

Does the Change/Modification:

- * (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes no
- * (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety and analysis report? yes no
- * (c) reduce the margin of safety as defined in the basis for any technical specification? yes no

Details of Evaluation (Explain why answers to above questions are "no". Attach pages if required.)

See Attached detailed evaluation

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*NOTE: If these questions are "yes", the change must receive N.R.C. approval.

Evaluation prepared by: *Ronald J. Sumner* Date *N/A*
Reviewed by: *N/A See attached* Date *N/A*
Approved by: *N/A See attached* Date *N/A*
Lead Engineer
Unit Superintendent

MINOR

~~MAJOR~~ MINOR CHANGE/MODIFICATION REQUEST FORM

TMI Nuclear Station

Unit No. I

Change Modification No. 1096
Priority I
Operator Training YES NO
QC YES NO

1. System: Heads Gas Analyzer 2. Component: Analyzer Piping

3. Describe Change/Modification requested:
See attached work Request.

4. Reason for Change/Modification: TO ENSURE THE ABILITY TO DRAW A REPRESENTATIVE VENT FOR SAMPLE. THIS ALLOW SUFFICIENT FLOW BY BYPASSING THE REGULATOR

5. Supervisor of Maintenance R. L. Summers Date 5-15-78

6. Cognizant Engineer assigned R. L. Summers

7. Does the work constitute a change to a system or component as described in the FSAR? Yes No

8. If 7 above is "yes", does the change constitute an Unreviewed Safety Question? Yes No

9. If 8 is "yes", the work must receive NRC approval prior to performance. If 8 is "no", prepare and attach a detailed safety evaluation (page 2 of this form).

Lead Engineer A. B. Bailey Date 10-3-78

10. Station Superintendent/Unit Superintendent has taken the following action: (Check either a or b)

- (a) Reviewed the change/modification and it does not constitute a change to a system or component as described in the FSAR.
- (b) The change/modification is a change to a component or system described in the FSAR but the change does not constitute an Unreviewed Safety Question. A written safety evaluation has been prepared and forwarded to the Manager, Generation Engineering for concurrence and documentation.
- (c) PORC review requested YES

NOTE: Q.C. modifications must receive Mgr. Gen. on Engineering & Mgr. QQA approval.

Unit Superintendent G. P. Stanton Date 10/9/78

Post Change/Modification Review and Follow-Up

11. Supervisor of Maintenance - All action on Work Request which performed this change/modification is complete.
Signature R. L. Summers Date 11/13/78

12. Lead Engineer - Necessary follow-up action has been taken as listed below.
(a) Revised Drawings Submitted (list affected drawings) _____
(b) FSAR Changes Submitted (list affected section) _____
(c) Procedure Changes Submitted (list affected procedures) _____
(d) Preventive Maintenance Revised _____
(e) Necessary Spare Parts Ordered _____
Signature _____ Date _____

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13. Unit Superintendent-Signature _____ Date _____

14. As Built Letter Number _____

EQUIPMENT SPECIFICATION

HAYES GAS ANALYZER PIPING MOD - C/M # 1096 Attachment # 2

				TAG #
1	ea	Regulator 3-20 psig pressure	=	CA-V1028
		311-010-7000-0 1/2" NPT Inlet/Outlet		
		551-803-5000-1 Panel Mounting		
		1B10F036 Stainless Steel Body		
		Handwheel		
		Non-bleed Type		
		No Internal Relief		
		(Similar to Fisher Model 675)		
2	ea	254-960-4000-1 Flowmeter 100-1000cc/min. air		CA-FI388A/B
		1B03M013 Without integral valve		
		Dwyer Model #RMA-13		
1/2	ea	311-010-7000-0 - Gauge 0-30 psig pressure		CA-PT 906/907
		Size - 2"		
		Back Connection		
		Ashcroft Figure 1000	BEST COST AVAILABLE	
		<i>Handwritten notes:</i> 9/4/77		
		<i>Handwritten notes:</i> R. Summer		
		<i>Handwritten notes:</i> Gauge 0-10" psig pressure		CA-PT 906
		<i>Handwritten notes:</i> Size - approx 2"		
		<i>Handwritten notes:</i> Back Connection Preferred		
		<i>Handwritten notes:</i> C/M # 1096		

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.: Hayes Gas Analyzer Piping Mod - C/M #1096
2. Purpose: To modify gas sample panel piping for easier/safer sample collection
3. Description of system or component to be worked on.
Hayes Gas Analyzer Sample Panel
4. References:
Attached sketch & equip specs.
5. Special Tools, Materials and Qualifications required.
Equipment per attached spec. sheet
6. Detailed Procedure (attach additional pages as required)
Attached

Supervisor of Maintenance Recommends Approval [Signature] Date 10/3/78
*Unit 1 PORC Recommends Approval [Signature] 11/2/78 *Unit 2 PORC Recommends Approval _____
Chairman Date Chairman Date
*Unit 1 Supt. Approval [Signature] 11/3/78 *Unit 2 Supt. Approval _____
Date Date
Supervisor Quality Control _____ Date _____

*NOTE: These approvals require only on Nuclear Safety Related/Radiation Work Permit Jobs.

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MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit TIME 1

Component # CA-V1028

Group _____

Component Name RM-A 7-Smpl. Panel

Date	Remarks (History of Corrective Maintenance)
9/4/79	<p>TEST PERFORMED BY R. Summers (Log Engin.) & CAR. MUEPS (HP Tech)</p>
	<p>1. Took 200 sample from "B" Blood Tank through the Attenelli bunker path. No problem. CA-V1028 regulated pressure and concentration.</p>
	<p>2. Took 200 sample from "A" waste gas down tank thru Tritium sample bottle. Pegged new pressure gage PI 906 otherwise no problem.</p>
	<p>3. Bleed valve checked for set point - 5.3 psig for 3 trials using PI 907 (0-30 psig gage @ 2 psi increments)</p>
	<p>Will install 0-100 psig pressure gage for PI 906 prior to WR descent</p>
	<p>BEST COPY AVAILABLE</p>
	<p> 9/4/79</p>

Snoop fittings on vent header side of SV-A7-5 & A7-8
with vent header pressure on ~~them~~ ^{R1} the fittings.

7. Remove tagging
8. Operations draw gas samples to verify new equipment operable.
9. Place valve identification tags on new equipment
instrument

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W.R.# 23814

PROCEDURE - MODIFICATION OF HAYES GAS SAMPLE PANEL

1. Tagging as required to isolate sample panel
2. Remove existing pressure regulator and Flow indicators
3. Install new pressure regulator with control handle on face of panel
4. Install new flow indicators
5. Install new pressure gages, visible on panel face.

Note: GAI Line Spec C-1 is to be used. Threaded fittings are permitted

6. Pressurize the panel piping to 23 psig with air or nitrogen and use snoop solution to verify zero visible gas leakage at all fittings.

Lineup For Leak Test

}	Closed	CA-V112	<u>WS</u>
		SV-A7-1	<u>WS</u>
		-A7-2	<u>WS</u>
		-A7-3	<u>WS</u>
		-A7-5	<u>WS</u>
		-A7-8	<u>WS</u>

}	Open	CA-V1028	<u>WS</u>	← (handwheel tightened clockwise)
		SV-A7-1B	<u>WS</u>	
		-A7-4	<u>WS</u>	
		-A7-6	<u>WS</u>	
		-A7-7	<u>WS</u>	

Note: Pressurize at each bomb connection as necessary to test ~~set~~ all panel tubing and instrumentation

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WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. I W.O./Account TB 003/5304 NPRO Form Req'd No Work Request No. 23814 Priority E
M

Items 1 through 5 completed by originator

- 1. System: HAZE GAS ANALYZER
- 2. Component (name & number): MODIFY TO ALLOW LEASE OF SAMPLING
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.
UNABLE TO DRAW SAMPLE ON THE HAZE GAS SYSTEM MODIFY AS PER DWG.

4. Originator: L. NOU Date/Time: 5/11/78

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component? If yes, an approved change modification is required per AP 1021. C/M No. 1096 Yes No

7a. Does work require an RWP AS PER RWP DWG Yes No

7b. Is an approved procedure required to minimize personnel exposure. Yes No

8a. Is work on a QC component as defined in GP 1008. Yes No PR

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating/shut down

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

no leaks under operating pressure

14. Estimated manhours to perform job: E _____ IC _____ M 4 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8 N/A Date _____

17. Supervisor of Maintenance approval to commence work: RC Troutman Date 7-25-77

18. Shift Foreman's approval to commence work D. Pulsty Date 10-4-79

Initial of Shift Foreman NA Tagging Application No. NA Radiation Work Permit No.

19. Maintenance Foreman's comments on work performed:

POT HANDWHEEL ON, ADJUSTED PACKING

walfe

Neal Hennings Work Completed - Maintenance Foreman's Signature Date/Time 10-4-79

20. Work completed and component aligned for testing.

If S.F. signature Initial not required. D. Pulsty Shift Foreman's Signature Date 10-4-79

21. Testing completed and component released for normal use.

If S.F. signature initial not required. D. Pulsty Shift Foreman's Signature Date 10-4-79

22. Quality Control Department review of work and testing completed (QC work only).

N/A QC Department Date

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

110 10/11/79 RC Troutman Supervisor of Maintenance Signature Date 10/11/79

Actual Manhours to perform job

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 20825
Priority 2A

W.O./Account No: 18223/530.8 NPRD Form Req'd. No

M

Items 1 through 5 completed by originator

1. System: HEADER DRAIN
2. Component (name & number) DRAIN VALVE HD-V 50 B
3. Describe malfunction or modification and recommended corrective action.
NO HAND WHEEL
WATER LEAKING ON FLOOR

4. Originator: KIMMEY Date/Time: 7/22/77 1415

5. Originator's Supervisor's Signature Book/Kimble

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No
10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

N/A
Unit/Station Superintendent _____ Date _____

11. Plant status or Pre-requisite conditions required for performance of work.

Operating or shutdown

BEST COPY AVAILABLE

JOB TICKET (WORK REQUEST)
REVIEW - CLASSIFICATION - ROUTING CONTROL FORM

JOB TICKET (WORK REQUEST) NUMBER C-1-527

OP. 1.05

12. Retest met acceptance criteria

Yes

No

13. Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

7/3/79
Date

Jim Blumstein

14. Work completed and component aligned for testing.

Initial if S. F. signature is not required.

[Signature]
Shift Foreman's Signature

7/3/79
Date

15. Testing completed and component released for normal use.

Initial if S. F. signature is not required.

[Signature]
Shift Foreman's Signature

7/3/79
Date

16. Quality Control Department review of work and testing completed (QC work only).

N/A
Surveillance Report No.

[Signature]
QC Department

7/6/79
Date

17. Supervisor of Maintenance Job Ticket (Work Request) and procedure are complete and signed off as required. Change/modification form has been signed off as required.

[Signature]
Supervisor of Maintenance Signature

7/7/79
Date

Quality Control

ACCEPT

CONTROL FORM

KEY NUMBER 1-55

Purchase Order

446705

Item No. 1

SEP 10 1974

Q.C. Inspector

E. Lee

Date

Insurgent?

Yes No

- 2a. Does work require an RWP? Yes No
- 2b. Is an approved procedure required to minimize personnel exposure. Yes No
- 3a. Is work on a QC component as defined in GP 1003. Yes No
- 3b. If 3a is yes does work have an effect on Nuclear Safety? If 3b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No
- 4. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 3a is Yes and 3b is No).

1000-F-1 Rev 1 7/14/72

Unit Superintendent

Date

- 5a. Is the system on the Environmental Impact list in AP 1025 Yes No
- 5b. If 5a is Yes, is an approved procedure required to limit environmental impact? Yes No
- 6. Agreement that 5b is No. (Required only if 5a is Yes).

Unit Superintendent/Supervisor of Operations

Date

- 7. Plant status or prerequisite conditions required for work. operating / shutdown
- 8. QC Dept. review, if required in item No. 3

QC Supervisor

John J. Mackey

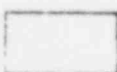
Date

7-2-79

- 9. Supervisor of Maintenance approval to commence work: code invp. to be notified Yes No

- 10. Maintenance Foreman Assigned: Jim Almond

- 11. Shift Foreman's approval to commence work [Signature] Date 7/3/79



Initial of Shift Foreman signature is not required

030345

Radiation Work Permit No.

DEPARTMENT DESIGNATION					LOCATION/UNIT	JOB TYPE	JOB TICKET NUMBER	REPORT DATE		
SYS	COMP. TYPE	COMP. ID	LOC. NO.	LOC. UNIT				MO	DAY	YR
FAF		0006	0350	01CM		01055	05	22	77	

RECOMMENDED
BY C.S.T.

DESCRIBE
MALFUNCTION
OR
MODIFICATION
DESIRED

FILTERS HAS HIGH S.M. REPLACEMENT FILTERS WENT
ROLLED ACCESS HOT PLAINING SHOP AREA 27A.

CAUSE OF
MALFUNCTION
(IF KNOWN)

ORIGINATOR'S
EMP. NO.
05571

ORIGINATOR'S SIGNATURE
[Signature]

SUPERVISOR'S
EMP. NO.
0-1-15

SUPERVISOR'S SIGNATURE
[Signature]

76721/570-5

WORK ORDER NUMBER		GC CODE	ACCOUNT NUMBER	PLANT CONDITION			WFO NUMBER		START						
LOCATION	SERIAL			SU	OP	HO	CO	RA	HS	LR	YR	MO	DAY	HR	MIN
0350	01055	97FD	25005	/	/	/	/	/	/	/					

ORIG. NO.	REQ. NO.	SAFETY	REG. AGENCY CODE	CHG. NO. NUMBER	TAGGING APPLICATION	EST. CODE	OUTLET CHARGE CODE	START DATE	ESTIMATED DURATION
0110						X		0000765	

S/P APPROVAL COMMENCE WORK			S/P APPROVAL COMMENCE WORK			PROCEDURE NUMBER	RESP. LOCATION OR CONTRACTOR	EST. MAN-HRS
MO	DAY	YR	MO	DAY	YR			
4702	7907	0379	1440	-A-1	REV. 1	20254	05000120	

ASSISTING DEPARTMENT			ASSISTING DEPARTMENT			ASSISTING DEPARTMENT		
RESP. LOCATION OR CONTRACTOR	EST. CREW	EST. MANHOURS	RESP. LOCATION OR CONTRACTOR	EST. CREW	EST. MANHOURS	RESP. LOCATION OR CONTRACTOR	EST. CREW	EST. MANHOURS

JOB COMPLETION DATE	FIELD WORK COMPLETION DATE	SON OFF REASON CODE	TOTAL ACTUAL MANHOURS	PURCHASE REQUISITION NUMBER	PURCHASE ORDER NUMBER	WATER ORDER NUMBER
MO DAY YR	MO DAY YR	45 50 53 55				
0717	0705	791	000200			

RESOLUTION DESCRIPTION
07 REPLACED FILTERS IN BOTH UNITS FAF60468
08
09
10

NPRC FAILURE END					FAILURE STATUS	ORIGINATOR - SUPERVISOR - SUPERVISOR OF MAINTENANCE - MAINTENANCE FOREMAN - SUPERVISOR OF MAINTENANCE - CM COORDINATOR - DATA ENTRY - SUPERVISOR OF MAINTENANCE - CM COORDINATOR - DATA ENTRY
YR	MO	DAY	HR	MIN	NO	
77					50	

FAILURE TYPE	FAILURE MODE	CAUSE OF FAILURE CODES	EFFECT OF FAILURE CODES	ACTION TAKEN CODES	LIFE LINE EVENT REFERENCE DATE
1	2	A B	A B	A E	YR MO DAY
0103	A				

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1002
AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *filters changed* E IC M U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: *SC [Signature]* Date 10-28-77

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. _____
W.O./Account No. 78003/5305 NPRD Form Req'd No

Work Request No. 21769
Priority 2A

Utility

Items 1 through 5 completed by originator

- 1. System: Air Handling
- 2. Component (name & number) AH-F-55 AH-F-6A/6B.

3. Describe malfunction and cause of malfunction (if known) or modification desired.

Change filter.

4. Originator: Booth Date/Time: 10/27/77 1340

5. Originator's Supervisor's Signature *[Signature]*

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWR? Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes _____ No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
operating 31.0

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E IC M U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman _____
signature is not required

Tagging Application No.

Radiation Work Permit No.

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

32.0

COZ

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. T8003/530.5 NPRD Form Req'd No

Work Request No. 21794
Priority 2A
Utility

Items 1 through 5 completed by originator

- 1. System: H & V
- 2. Component (name & number) HOT MACHINE SHOP EXH. FANS AH-E-20A
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.
Filter unit for AH-E-20A High Dip > 3" H₂O

4. Originator: E. TENNIS Date/Time: 10/30/77 2200

5. Originator's Supervisor's Signature [Signature]

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure? Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes No _____
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

11. Plant status or prerequisite conditions required for work.
31.0

operating

BEST COPY AVAILABLE

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

*Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual*

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required _____
 Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
 _____ Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

 Surveillance Report No. QC Department Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification (part) has been signed off as required. Machinery history entry has been made, if required.

 Actual Manhours to perform job Supervisor of Maintenance Signature Date

WORK REQUEST APPROVAL
TMI Nuclear Station

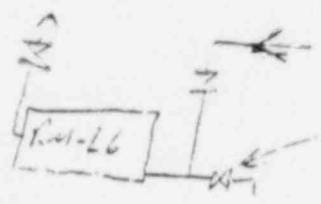
Unit No. 1
Work Request Procedure (A.P. 1016 Sect. 6.0)
should be used as a guide in filling out this form.

Work Request No. 19660
Priority 1A
m

W.O./Account No T8054/6127/5323 NPRD Form Req'd. No

Items 1 through 5 completed by originator

- 1. System: RAD WASTE LIQUID
- 2. Component (name & number) RM-16 DRAIN VALVE
- 3. Describe malfunction or modification and recommended correction:
RM-16 DRAIN VALVE LEAKS - REPLACE VALVE



Need this to dump tank.

- 4. Originator: W. J. Bell Date/Time: 4/17/77
- 5. Originator's Supervisor's Signature: Book/Kuder

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change/modification procedure before work can be performed. Notify Technical Services Dept. for assistance (A.P. 1016, Sect. 7.0) C/M No. _____ Yes No
- 7. a. Does the work require a Radiation Work Permit? Yes No
b. Is an approved procedure required to minimize personnel exposure? Yes No
- 8. Is work on a QC component as defined in A.P. 908? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No
- 9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes No
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

*PORC reviewed
procedure 1410-V-10 attached
J. Kelly 4-26-77
If other need to be
replaced, addendum to
procedure is
TMI-59 Rev. 10-76*

Unit/Station Superintendent _____ Date _____

- 11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

BEST COPY AVAILABLE

CC-1

Mech

RR-V-21B sticks open

~~JOB TICKET #~~ 24882 PAPERWORK

HAS BEEN MISPLACED.

THE JOB HAS BEEN: (Circle Applicable No.)

1. CANCELLED ON _____
(Date)

② COMPLETED ON 08-02-79
(Date)

APPROVED BY:

[Signature] 7/17/80
(Supervisor of Maintenance)

DATA SHEETS
(2 of 2)

WR# 22181

6.2.5
and/or
6.4.11 & 14

As Left Data:

Running Current 2.4 Amps
Cycle Time 10 Sec.
Torque Close Current 2.6 Amps

Valve Cycled Properly YES (yes/no)

Console Indication Correct YES (yes/no)

Megger Values (if taken): N/A Motor with Cable

N/A Motor Only

N/A Cable Only

Stem Nut Properly Secured (if applicable):

Threaded Stem Nut has Lock Nut Staked Twice N/A

Test Equipment (if used)

Serial No.

Calibration Due Date

Amp Probe

ED 5

7-15-80

Performed By Tom Wunderlich

Date 4/7/78

Approved By JR Bauman

Date 4/8/78

6.2 TROUBLESHOOTING

Must be completed on work on ES Valves.

Xerox a copy and send to cognizant Electrical Engineer.

6.2.1 Operators description of the problem:

N/A

Apparent Cause:

N/A

Machinery history:

Motor nameplate current	<u>2.75 Amps</u>
Operating Time	<u>10 Sec.</u>
Last measured running current	<u>2.3 Amps</u>

As Found Data:

Running current	<u>2.4 Amps</u>
Cycle time	<u>10 Sec.</u>
Torque Close Current	<u>2.6 Amps</u>

6.2.4 Action Taken:

- | | |
|--------------------------------|------------------------------------|
| A) Breaker Tripped | Yes _____ No _____ |
| B) Thermal OL tripped | Yes _____ No _____ |
| C) Control power fuse blown | Yes _____ No _____ |
| D) Defective control component | Cause _____ |
| | 1) _____ P.B. Switches |
| | 2) _____ Contactors |
| | 3) _____ Control power transformer |
| | 4) _____ Auxiliary relays |
| | 5) _____ Limit switch |
| | 6) _____ Torque switch |
| | 7) _____ Other: identify _____ |
- N/A
SRB

- 6.4.7 Connect the motor leads and control leads.
- 6.4.8 Adjust the limit switches and torque switch per 1420-LTQ-2 and 1420-LTQ-3.

CAUTION: Incorrect motor rotation may result in operator/valve damage since the limit switches will not stop travel.

- 6.4.9 Place valve in mid position. Press the open pushbutton. With an insulated tool open the opening torque switch. Verify that direction of travel was correct and motor stopped when torque switch was opened.
- 6.4.10 Press the close push button. Open the CLOSE torque switch and verify that direction of travel was correct and motor stopped.
- 6.4.11 Cycle valve and record:

- Running Current
- Torque Close Current
- Cycle Time

Verify that indicating lamps worked properly.

- 6.4.12 Install limit switch compartment cover (replace gasket if necessary).
- 6.4.13 Install valve stem guard pipe.
- 6.4.14 Assure as left data taken meets acceptance criteria and return the valve to service.

6.5 ACCEPTANCE CRITERIA

- 6.5.1 Running current must be within nameplate.
- 6.5.2 Valve cycles properly and console indication is correct.
- 6.5.3 Megger valves (if taken)
 - a) Motor with cable 1.6 Megohms
 - b) Motor only 6.0 Megohms
 - c) Cable only 1.6 Megohms
- 6.5.4 Stem nut staked in two places if operator or stem nut was just installed (applicable to threaded stem nuts only).

- 1) Use hoist or other means to support operator.
 - 2) Unbolt the operator from the valve yoke.
 - 3) Turn the handwheel to unthread stem nut from the valve stem.
- b) If the threaded stem nut is to be removed and installed in a new operator, proceed as follows:
- 1) Drill out the stake marks on the lock nut.
 - 2) Remove the locknut.
 - 3) Turn the hand wheel to push the stem nut out of the splined drive sleeve.
 - 4) Remove the stem nut.
 - 5) Support the operator.
 - 6) Unbolt from the valve yoke.

6.3.5 Splined Stem Nut

- a) Remove the hex nut and lock washer from top of valve stem.
- b) Support the operator, unbolt and remove operator from the valve yoke.

6.4 INSTALLATION OF LIMITORQUE OPERATOR

6.4.1 Assure that operator is correct for the valve such as:

- a) Motor size and speed.
- b) Helical and worm gear ratios.
- c) Spring pack.
- d) Stem nut.

Consult Limitorque Factory if necessary.

6.4.2 Assure that the operator has adequate grease. See the chart in the Lubrication data sheet of Limitorque instructions.

6.4.3 If new operator is being installed take phase resistance and megger readings.

6.4.4 Install operator by supporting it above the valve stem and turning the handwheel to thread the stem nut onto the valve stem. (Stem nut may be installed by threading the stem nut on the valve stem then turning the handwheel to engage the drive sleeve splines.)

6.4.5 Bolt the operator onto the valve yoke.

6.4.6 Ensure that the locknut is staked in two places.

6.3.4 Threaded stem nut.

- a) If the same operator is to be reinstalled the stem nut may be left in position.

- f) High running current
- 1) Check for phase unbalance
 - 2) Check for low voltage
 - 3) Have mechanical maintenance check for overtight packing. Lubricate valve stem.
 - 4) Listen for abnormal sounds from the operator. Disassemble and inspect, if necessary, per Limatorque Instructions.
- g) Handwheel or motor drive will not engage
- 1) Disassemble and inspect clutch mechanism per Limatorque Instructions.
 - 2) Check the lugs on the worm gear to assure that they are not worn or broken.
- h) Intermittant contact on torque switch
- 1) Assure movable contact is not bent.
 - 2) Clean the contacts if required.
 - 3) Remove torque switch and assure that the rotor turns freely without binding.
- i) Limit switch intermittant contact
- 1) Without disconnecting leads remove the contact block for access to the contacts. Clean using an eraser and inspect for pitting.
 - 2) Reinstall the contact block, and check adjustment of the fingers. Bend the contact fingers slightly if necessary to assure that they contact the rotor buttons.
- j) Valve fails to open
- 1) Limit switch that bypasses the open torque switch may be improperly adjusted. (LS5 Typical)

6.2.5 Upon completion of repairs, cycle the valve. Assure that as left data taken meets the acceptance criteria and return the valve to service.

6.3 REMOVAL OF LIMITORQUE OPERATOR

CAUTION: If an operator is to be removed on a pressurized system, assure that the valve is backseated prior to removing the operator.

6.3.1 Assure that the electrical leads are properly marked.

6.3.2 Disconnect all electrical leads and conduit.

6.3.3 Inspect the stem nut/valve stem. The stem nut may be threaded on the stem or may be splined.

- (1) Motor nameplate current
- (2) Last measured current
- (3) Valve operating time

- 6.2.2 Stroke the valve and record opening current, closing current and operating time.
- 6.2.3 If starter does not pick up, check with voltmeter to see if the molded case breaker is tripped.
- 6.2.4 Evaluate the symptoms and investigate the cause. The following table gives recommended action.

<u>SYSTEM/PROBLEM</u>	<u>SUGGESTED ACTION</u>
a) Breaker tripped.	<ol style="list-style-type: none"> 1) Megger cable/motor 2) Test breaker per 1420-BKR-2 3) Check for intermittent contact or rapid reversing of motor due to operator action or control circuit problem. 4) Check for torque switch "chatter" due to defective torque switch or valve stem binding.
b) Thermal OL tripped	<ol style="list-style-type: none"> 1) Check running current on all three phases 2) Test thermal overload device per E-21. 3) Check for excessive cycling. <p>NOTE: If thermal OL tripped on ES valve inspect motor for evidence of overheating. Take megger and phase resistance reading.</p>
c) Contactor won't pick up	<ol style="list-style-type: none"> 1) Refer to elementary. Check points in control circuit until faulty component is located. Repair or replace component.
d) Red and Green Lights Cycle on and off	<ol style="list-style-type: none"> 1) Check for backed out lock nut on stem nut. Reinstall and stake in 2 places. 2) Check for stripped stem nut, broken gears or broken housing. Repair per limitorque instructions manual.
e) Valve does not complete its travel	<ol style="list-style-type: none"> 1) Check torque switch/limit switch. Replace/adjust per 1420-LTQ 2 or 3.

6.0 PROCEDURE

NOTE: The correct setup and adjustment of Limitorque Valve operators is essential for several reasons. Some of them are listed below:

- a) The valve stem/body can be damaged if subjected to excessive forces. This is especially true of valves on high pressure systems where the operator must develop higher forces to open and close the valve.
- b) Many operators are in high radiation/high temperature areas and may not be accessible for readjustment after plant startup.
- c) Many limitorque operators are on safety related valves or valves essential to plant operation.

6.1 LIMITS AND PRECAUTIONS

- a) The Shift Supervisor must determine the plant conditions and redundant component testing required prior to taking Engineered Safeguards or Tech. Spec. related valves out of service.
- b) Comply with HP precautions and notify HP personnel if conditions in the work area change (where applicable).
- c) Each Limitorque operator is built specifically for one type/size of valve. Parts such as spring packs, worm gears, stem nuts and motors should not be changed unless it is known that the replacement parts are identical.
- d) On ES valves the specific cause for the malfunction should be identified. Knowing the exact cause may prevent a large scale inspection program and help prevent future failures.
- e) On ES valves the thermal O.L. is set high and cannot be relied upon to protect the motor. If the O.L. has tripped on an ES motor, physically inspect the valve motor for discoloration and megger the motor. (Megger only for valves inside the R.B.)

NOTE: Section 6.2 of this procedure is a guide. It does not have to be completed in sequence. On failed ES valves, foreman must instruct maintenance personnel to complete 6.2.1 and 6.2.2 and make every effort to identify the cause of failure.

6.2 TROUBLESHOOTING LIMITORQUE OPERATORS AND CONTROL CIRCUITS

6.2.1 Prior to stroking the valve:

- a) Get the operators description of the problem if possible.
- b) Connect clamp on ammeter at the MCC.
- c) Determine from machinery history the following information and record on the data sheet.

CONTROLLED COPY

Supv. Elec Maint
WORK REQUEST PROCEDURE

1420-LTQ-1
Revision 1
03/19/77

TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. Station

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1420-LTQ-1

1. Procedure Title & No..
- A. Troubleshooting Limitorque Valve Operators and Control Circuits
 - B. Removal and Replacement of Limitorque Valve Operators.

2. Purpose:

To provide the guidance necessary to troubleshoot and repair valve operator problems and to provide instructions for removal and replacement of Limitorque operators.

3. Description of system or component to be worked on.

Limitorque Valve operators, all sizes, all systems.

4. References:
- | | |
|------------|-------------------------------|
| AP 1002 | 1420-BKR-2 |
| AP 1003 | PM E 21 |
| 1420-LTQ-2 | Limitorque Instruction Manual |
| 1420-LTQ-3 | |

5. Special Tools, Materials and Qualifications required.

As noted in procedure.

6. Detailed Procedure (attach additional pages as required)

Attached.

Supervisor of Maintenance recommends approval *[Signature]* Date 3-1-77

* PGRC Recommendations approval - Chairman *[Signature]* Date 3-2-77 10/2/77

* Unit/Station Superintendent Approval *[Signature]* Date 3-4-77 3-10

*NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

Standing Procedure *[Signature]* Date 3/1/77
Q.C. Supervisor

6.0 Procedure

6.1 Limits and precaution

6.1.1 Tag equip as per AP 1002

6.1.2 Obtain RWP, Comply with AP 1003

6.2 Inspection of torque switch

6.2.1 Check for excessive discoloring of white plastic

6.2.2 Check plastic for cracking

6.3 Replace or Repair torque switch as necessary

6.4 List as found condition

Limit Sw & Torque Sw made of white plastic
 Both Limit Sw & Torque Sw in good condition, JRB

6.5 List parts used and as left condition

N/A

6.6 Return components to service

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.: *Inspect torque switches for long term usage*
2. Purpose: *provide instruction to inspect, repair, or replacement of torque switches*
3. Description of system or component to be worked on.
RC-U-1, RC-U-2
4. References:
diag 208-458 & 208-426
5. Special Tools, Materials and Qualifications required.
basic hand tools
6. Detailed Procedure (attach additional pages as required)
attached

Supervisor of Maintenance Recommends Approval *WJ* Date *3-2-78*
*Unit 1 PORC Recommends Approval _____ Chairman _____ Date _____ *Unit 2 PORC Recommends Approval _____ Chairman _____ Date _____
*Unit 1 Supt. Approval _____ Date _____ *Unit 2 Supt. Approval _____ Date _____
Supervisor Quality Control _____ Date _____

*NOTE: These approvals require only on Nuclear Safety Related/Radiation Work Permit Jobs.

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

**COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1008
AND KEY ID SAFETY MANUAL**

13. Post Maintenance Testing required and Acceptance Criteria. Torque/Limit SW in the of what
14. Estimated manhours to perform job: E 8 IC M U Plastic handle.
15. Maintenance Foreman Assigned: J. R. ICAUD
16. QC Dept. review, if required in item No. 8
QC Supervisor R. Nelli Date 3/2/78
17. Supervisor of Maintenance approval to commence work: R. Nelli Date 3/3/78
18. Shift Foreman's approval to commence work D. J. Patsy Date 3/20/78

Initial if Shift Foreman signature is not required

488
Tagging Application No.

17935
Radiation Work Permit No.

19. Comments on work performed:

Inspected limit SW & Torque SW. Found Both in good condition, Cycled operator & checked limit switches. All limit SW working OK. Checked Cycle time & current.

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Tom Wundschlich

4/8/78
Date

J.R. Bowman

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

D. J. Patsy
Shift Foreman's Signature

4-10-78
Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

D. J. Patsy
Shift Foreman's Signature

4-10-78
Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. N/A

RIS Calandri
QC Department Date 4/15/79

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

16
Actual Manhours to perform job

R. Nelli
Supervisor of Maintenance Signature

4/18/79
Date

E1012

WORK REQUEST APPROVAL
TMI Nuclear Station

Area 10
B+W ✓
22181
2 D
E

Unit No. 1
W.O./Account No. 78003/530.1 NPRD Form Req'd No

Work Request No. 22181
Priority 2 D
E

Items 1 through 5 completed by originator

1. System: Reactor Coolant

2. Component (name & number) REACT RC V2 - ~~RCV 1~~

3. Describe malfunction and cause of malfunction (if known) or modification desired. Inspect torque switches. Verify that the torque switches are qualified for long term use in Rx building as evidenced by white plastic imp.
Inspect torque switches. Verify that the torque switches are qualified for long term use in Rx building as evidenced by white plastic imp.
FIELD
3/29/78

4. Originator: CE Hartman Date/Time: 12/13/77

5. Originator's Supervisor's Signature CE Hartman

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
shutdown 31.0

12. Limits and Precautions:

Inservice Shift Supervisor and Lead Chem Tech Supervisors are notified prior to start of work.

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

- ① COMPLY WITH THE PROVISIONS SET FORTH IN AP1002, 1003 AND MET ED SAFETY MANUAL
- ② Mark RM-A-6 and 8 charts in anticipation of a release when the bonnet is broken.
- ③ Take all required HP precautions in anticipation of a gaseous release during maintenance on this valve.

13. Post Maintenance Testing required and Acceptance Criteria.

DIAPHRAM HAS BEEN CHANGED + VALVE DOES NOT LEAK

14. Estimated manhours to perform job: E _____ IC _____ M 4 U _____

15. Maintenance Foreman Assigned: A.D. CONRAD

16. QC Dept. review, if required in item No. 8 W. H. Hottel Date 11/7/75

17. Supervisor of Maintenance approval to commence work: L.M. Shurber Date 11-10-75

18. Shift Foreman's approval to commence work _____ Date _____

Tagging Application No. _____

Radiation Work Permit No. _____

19. Maintenance Foreman's comments on work performed:



Work Completed - Maintenance Foreman's Signature _____

Date/Time _____

20. Work completed and component aligned for testing.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

QC Department _____

Date _____

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours for this job _____

Supervisor of Maintenance Signature _____

Date _____

1G - WDG

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1

Work Request No. 11987

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority 2A

W.O./Account No. T8003/530.4 NPRD Form Req'd. NO

Items 1 through 5 completed by originator

1. System: WDG

2. Component (name & number) WDG - V 85 & V 32

3. Describe malfunction or modification and recommended corrective action.
WDG - V 85 STEM TURNS WITH HAND WHEEL
IT IS A DIAPHRAM VALVE

4. Originator: Wooddell Date/Time: 10/20/75

5. Originator's Supervisor's Signature G.A. King

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Section 7.0) C.M. No. _____ Yes _____ No

7. Does the work require a Radiation Work Permit? If yes, the work must be performed using a PORC reviewed, Station Superintendent approved procedure. Yes No _____

8. Is work on a QC component as defined in G.P. 1008? If yes, the answers to questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No _____

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes _____ No

10. If the work does not have an effect on nuclear safety or radiation exposure to personnel (i.e., require a Radiation Work Permit), the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10a. Agreement that a PORC reviewed, Station Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent _____ Date _____

11. Plant status or Pre-requisite conditions required for performance of work.
operating or shutdown

BEST COPY AVAILABLE

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

CONFORM WITH THE PROVISIONS
 SET FORTH IN AP1002, 1003
 AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E ____ IC ____ M ____ U ____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
 Foreman
 signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

 Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

 Shift Foreman's Signature

 Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

 Shift Foreman's Signature

 Date

22. Quality Control Department review of work and testing completed (QC work only).

 Surveillance Report No

 QC Department

 Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

 Actual Manhours to perform job

 Supervisor of Maintenance Signature

 Date

Completed by 223

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1900/1234
W.O. Account No. 18003/530.4

NPRD Form Req'd No

Work Request No. 23119
Priority 11A
M

Items 1 through 5 completed by originator

1. System: Waste Gas System

2. Component (name & number) WDG-V-85

3. Describe malfunction and cause of malfunction (if known) or modification desired.
WDG-V-85 inlet isolation to IC W60TK. stem appears to be ~~separated~~ separated from the diaphragm

4. Originator: *[Signature]* Date/Time: 2:30 3-10-78

5. Originator's Supervisor's Signature *[Signature]*

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

operating

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

CONFORM WITH THE PROVISIONS
 OF THE AS1002, 1003
 AND IIT ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

_____ Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. 18003/530.4

NPRD Form Req'd No

Work Request No. 22817
Priority 2A
M

Items 1 through 5 completed by originator

1. System: WASTE GAS DECAY TK IC

2. Component (name & number) WDG. U-85

3. Describe malfunction and cause of malfunction (if known) or modification desired.
VALVE STEM DOES NOT MOVE IN WHEN CLOSING VALVE.

Cancel see WR# 11987

4. Originator: MB Eng Area Date/Time: 11 Feb. 78. 1230

5. Originator's Supervisor's Signature D. L. Puley / M. J. R.

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

BEST COPY AVAILABLE

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

operation

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. _____

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

2. Purpose:

3. Description of system or component to be worked on.

4. References:

5. Special Tools, and Materials required.

6. Detailed Procedure (attach additional pages as required)

BEST COPY AVAILABLE

Supervisor of Maintenance recommends approval _____ Date _____

* WRC RECOMMENDS APPROVAL

Unit No. 1 Chairman _____ Date _____ Unit No. 2 Chairman _____ Date _____

* UNIT SUPERINTENDENT APPROVAL

Unit No. 1 _____ Date _____ Unit No. 2 _____ Date _____

* Standing Procedure _____
Supervisor of QC _____ Date _____

** Note: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

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COMPLY WITH IER PROVISIONS
SET FORTH IN AP1002, 1003
AND MET AD SAFETY MANUAL

- 12. Limits and Precautions.
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E IC M 12 U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required _____
 Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time Work Reviewed - Maintenance Foreman's Signature

_____ Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____
Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____
Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

CANCELLED
11-5-79
11-5-79

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account TECOB/ICDL/530.4 NPRD Form Req'd No Work Request No. 2422
Priority 1 A
M

Items 1 through 5 completed by originator

1. System: W RADIOWASTE DISPOSAL GAS

2. Component (name & number) WDG-V30 OUTLET WDG-T-1A

3. Describe malfunction and cause of malfunction (if known) or modification desired.

APPARENT CAUSE OF UNPLANNED RELEASE
6/16/78. WDG-V30 DID NOT SEAT TIGHTLY WITH
NORMAL FORCE AND ALLOWED LEAKAGE.
UPON EXCESSIVE TIGHTENING LEAKAGE STOPPED.
INSPECT, TEST & RELAP WDG-V30 SEAT AS NECESSARY

4. Originator: GUTHRIE Date/Time: 6/16/78

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes,
PORC reviewed Superintendent approved procedure must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure
is not required for this work because it has no effect on nuclear safety.
(Applies only if 8a is Yes and 8b is No).

Unit Superintendent

Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No ROS

10b. If 10a is Yes, is an approved procedure required to limit environmental
impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

Date

11. Plant status or prerequisite conditions required for work

operating

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COMPLY WITH THE PROVISIONS
SET FORTH IN AP1002, 1003
AND MET ED SAFETY MANUAL

BEST COPY AVAILABLE

12. Limits and Precautions:
- a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E ___ IC ___ M ___ U ___

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman
signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

3176 5 V900 1231

Supervisors Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

CANCELLED
25166
11/21/78

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. I Work Request No. 25166
W.O./Account T 802 / 1001 / 529.1 NPRD Form Req'd N Priority A
M

Items 1 through 5 completed by originator

- 1. System: R.B. Personnel + Emergency Access Hatches
- 2. Component (name & number) RB Personnel + Emergency Access Hatch
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.

attach chains to hammers and drift punches and install the hammers + punches in the RB Personnel + Emergency hatches near the center door linkage pins. Chain must be secure so hammers + punches cannot be removed + must be enough to reach linkage pins

4. Originator: [Signature] Date/Time: 11/21/78 9:40 AM
5. Originator's Supervisor's Signature [Signature]

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021. C/M No. 1021 Yes No
- 7a. Does work require an RWP Yes No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes No
- 8a. Is work on a QC component as defined in GP 1008. Yes No
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No
- 9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes No
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating or shutdown

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

CONFORM WITH THE PROVISIONS
SET FORTH IN AF1002, 1003
AND MET ED SAFETY MANUAL

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman

Tagging Application No.

Radiation Work Permit No.

signature is not required

19. Comments on work performed:

-
-
-

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

Canceled Urged

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1-2-11
W.O./Account No. 11003/1001/530.4 NPRD Form Req'd No

Work Request No. 24080
Priority TA
M

Items 1 through 5 completed by originator

1. System: Waste disposal liquid

2. Component (name & number) WOL-V-86

3. Describe malfunction and cause of malfunction (if known) or modification desired.
WOL-V-86 Inlet to 'B' W.E. Cont Demin Diaphragm
Leaking. Located Behind 'B' Rad Wash panel

4. Originator: E. Termin Date/Time: 6-1-78 0620

5. Originator's Supervisor's Signature [Signature] MSR

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No _____

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

Ascertained

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AM 020417

Material Order Generation

HEAD MO DAY YR	DATE MO DAY YR	USED FOR/ RETURNED FROM	ISSUED FROM/ RETURNED TO	STOREROOM NAME	TXN 12 15	740	Scrap Sale
						510	Return/Petrie
						620	Interchange

ISSUED TO (INTERCHANGE)	STOREROOM NAME	ACCOUNT	ACCOUNT	VOID	PP	SEC CODE
						45

ITEMS RE SUB	DATE MO DAY YR

STRM NO	10	12
WORK REQUEST NO		

ORDER	JOB NUMBER
WORK ORDLR	

ACCOUNT	VOID	PP	SEC CODE
			45

STOCK SYMBOL NUMBER	MA	SUB	ITEM	QTY	U/I	QUANTITY ISSUE/RETURN	QUANTITY REQUIRED	DESCRIPTION
46			65	65	65	65	65	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Procedure

6.1 Align valve shaft key slot up with key on part #6 of print D-46741,



6.2 Tighten nuts #16 of print D-46741

6.3 Disconnect valve position indicator

6.4 Fully close valve

6.5 Set valve position indicator in closed position

6.6 Reconnect valve position indicator

6.7 Cycle valve in ensure valve closes and opens fully, and that valve position indicator indicate same.

DATE	DESCRIPTION	AMOUNT	BALANCE
2	...		
3	N)		
4			
5	...		
6			
7			
8			
9			
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7.0

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.: Unit 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30 - 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39 - 40 - 41 - 42 - 43 - 44 - 45 - 46 - 47 - 48 - 49 - 50 - 51 - 52 - 53 - 54 - 55 - 56 - 57 - 58 - 59 - 60 - 61 - 62 - 63 - 64 - 65 - 66 - 67 - 68 - 69 - 70 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83 - 84 - 85 - 86 - 87 - 88 - 89 - 90 - 91 - 92 - 93 - 94 - 95 - 96 - 97 - 98 - 99 - 100

2. Purpose: to check and repair the...

3. Description of system or component to be worked on: ...

4. References: ...

5. Special Tools, Materials and Qualifications required: ...

6. Detailed Procedure (attach additional pages as required): ...

Supervisor of Maintenance Recommends Approval [Signature] Date 12/27/77
 *Unit 1 PORC Recommends Approval [Signature] Chairman Date 12-27-77 *Unit 2 PORC Recommends Approval [Signature] Chairman Date
 *Unit 1 Supt. Approval [Signature] Date 12-27-77 *Unit 2 Supt. Approval [Signature] Date
 Supervisor Quality Control [Signature] Date 12/27/77

*NOTE: These approvals require only on Nuclear Safety Related/Radiation Work Permit Jobs.

SAFETY AND HEALTH IN REPAIRS, 1964
AND THE RAD SAFETY MANUAL

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Ensure MUAIB is logged off.

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: *like other assembly - work load adjusted properly*
E 7 IC 2 M 2 U 1

15. Maintenance Foreman Assigned: G. STAMBAUGH

16. QC Dept. review, if required in item No. 8

QC Supervisor JL Gouin / W. W. Cotton Date 12/27/77

17. Supervisor of Maintenance approval to commence work: [Signature] Date 12-27-77

18. Shift Foreman's approval to commence work [Signature] Date 12/27/77

Initial if Shift Foreman signature is not required SS 13911
Tagging Application No. Radiation Work Permit No.

19. Comments on work performed: *Keins tolled valve stem guide, adjusted packing gland and the way to two-block position, inspected and then turned by work seat, packing leakage was 60 gals/hr (1000/1000)*

Retest met acceptance criteria Yes No

Work Performed by [Signature] Date
Work Reviewed - Maintenance Foreman's Signature

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. Shift Foreman's Signature Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).
 Surveillance Report No. QC Department Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.
 Actual Manhours to perform job Supervisor of Maintenance Signature Date

Handwritten scribbles and numbers: 11-5-77

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. 78003/5321

NPRD Form Req'd N

Work Request No. 22268
Priority 1A

Items 1 through 5 completed by originator

1. System: Make up and purification

2. Component (name & number) MU-V-74B

3. Describe malfunction and cause of malfunction (if known) or modification desired

Indicator is broken off ~~end~~ of valve positioner. Valve stem rotates, but does not close valve. Tighten stem lock and put in new positioner.

HOLD POINTS INDICATED

4. Originator: L. MUE

Date/Time: 12-27-77/0525

5. Originator's Supervisor's Signature L. MUE/G. [unclear]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No N

7a. Does work require an RWP

Yes No _____

7b. Is an approved procedure required to minimize personnel exposure.

Yes No _____

8a. Is work on a QC component as defined in GP 1008.

Yes _____ No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used.

Yes No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026

Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact

Yes _____ No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work:

Operation on schedule

- 12. Limits and Precautions.
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 8 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

CANCEL
Purged 11-2-79

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1 W.O./Account 12003/1001 530.7 NPRD Form Req'd No Work Request No. 24765 Priority 1A
M

Items 1 through 5 completed by originator

1. System: Deaer Heat River - Screen House
2. Component (name & number) Auto Vent on DRS-1A
3. Describe malfunction and cause of malfunction (if known) or modification desired.
Auto Vent stuck open instead of self-sealing.

4. Originator: Reigle Date/Time: 8-2-78/1335
5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes No _____
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No
9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

- _____
Unit Superintendent Date
- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
 - 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____
 - 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

COMPLY WITH THE PROVISIONS
 SET FORTH IN AEP.002, 1003
 AND NED ED SAFETY MANUAL

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 8 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comment on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

Purged

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1 Work Request No. 23602
W.O./Account 17003/5301 NPRD Form Req'd No Priority 1A
M safety

Items 1 through 5 completed by originator

1. System: CA

2. Component (name & number) CA-RV-5 Relief V.

3. Describe malfunction and cause of malfunction (if known) or modification desired.
CA-RV-5 does not lift until pressure exceeds .140 psig. This value should lift at 0 psig. Repair or readjust CA-RV-5

4. Originator: Reed Date/Time: 4/25/78 1800

5. Originator's Supervisor's Signature Dubiel

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes No _____

7b. Is an approved procedure required to minimize personnel exposure. Yes No _____

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8a is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating

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INTER-OFFICE MEMO

CATALYTIC, INC.

TO: D. M. Shovlin

AT Met-Ed

DATE: January 11, 1979

FROM: R. E. Patterson

AT Catalytic

COPY TO:

SUBJECT: Transmittal of Completed Work Request 10,374
18626 36

The attached work request No. 18626 has been completed and hereby returned as noted below.

EXCEPTIONS:

None

OTHER REMARKS:

None

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By: R. E. Patterson, Sr.
Superintendent:

DESIGNATED END USE DATA

N I II III SYSTEM APPLICATION

S I II III (TAG NOS.)

B/M OR SPEC. NO. W10-9

COMMENTS

PR-P-11/B
Packing gland kit

THIS TAG IS NOT TO BE REMOVED
UNTIL MATERIAL IS INSTALLED
IN A DESIGNATED END USE.

**DO NOT REMOVE
THIS TAG**

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MET-ED
Quality Control

ACCEPT

P.O. NO. 56941 ITEM NO. 2
Q.C. INSP. TALCUMOR DATE 6/20/78

GPF 4008.003

TMI-65A REV. 11-76

MET-ED
Quality Control

ACCEPT

Purchase Order 40776
Item No. 105
Q.C. Inspector mufshu Date 4/2/74

MET-ED. T.M.I. UNIT #1		
NOUN NAME	DESCRIPTION	
#2 PACKING GLAND KIT	# 98801 02	
STOCK NUMBER 843-007-6840-1	SYSTEM/TAG NUMBER TAG RR P 1A/B	
P.O. NUMBER 56941	SIZE 1B08M073	QUANTITY 1

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NOUN NAME: *Machine*
DESCRIPTION:

PART NO. *2618000*
STK. SYM. NO. *843-007-2000-1*
SYS./TAG NO. *2720*

P.O. NO. *17471*
REQ. NO. *100-0700*
LOCATION: *100-0700*

Quality Control

ACCEPT

Purchase Order 17471

Item No. 1

Q.C. Inspector John Date 11/6/74

NOUN NAME: *Pipe*
DESCRIPTION: *3/8"*

PART NO. *2618000*
STK. SYM. NO. *843-007-2000-1*
SYS./TAG NO. *2320-1*

P.O. NO. *40776*
REQ. NO. *100-0700*
LOCATION: *1807*

ED
Quality Control

ACCEPT

Purchase Order 40776

Item No. 75

Q.C. Inspector John Date 11/17/74

BEST COPY AVAILABLE

Quality Control

ACCEPT

Purchase Order 17491

Item No. 1

Q.C. Inspector [Signature]
GPF 4008 004
12 31 74 Rev. 0

Date 4/5/74
FA

NOUN NAME: Packing
DESCRIPTION:

Item #1 2618046
PART NO. 2618046
STK. SYM. NO. 843-007-2070-1
SYS./TAG NO. 2420

P.O. NO. 17491
REQ. NO. 100-9160
LOCATION 1B10 J 011

ED

Quality Control

ACCEPT

Purchase Order 40776

Item No. 38

Q.C. Inspector [Signature]

Date 4/17/74

NOUN NAME: PACKING
DESCRIPTION: 5/8" 3/8"

PART NO. 262302-
STK. SYM. NO. 843-007-2400-1
SYS./TAG NO. 2320-1

P.O. NO. 40776
REQ. NO. 100-0825
LOCATION 1B09 J 031
1061

BEST COPY AVAILABLE

DO NOT REMOVE
THIS TAG

DESIGNATED END USE DATA

N	I	II	III	SYSTEM APPLICATION
5	1	11	111	(TAG NOS.) <u>AP-P-1A/B</u>
B/M	D/R SPEC. NO. <u>10-9</u>			

COMMENTS
Featuring gland kit

THIS TAG IS NOT TO BE REMOVED
UNTIL MATERIAL IS INSTALLED
IN A DESIGNATED END USE.

REPT. COPY AVAILABLE

MET-ED

Quality Control

ACCEPT

Purchase Order 15684

Item No. 4

Q.C. Inspector [Signature] Date SEP 19 1975

MET-ED

Quality Control

ACCEPT

P.O. NO. 56941 ITEM NO. 2
Q.C. INSP. TACMANOR DATE 6/20/78

GPF 4008.003

TMI-85A REV. 11-76

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Handwritten notes:
11.48 11.44
11.42
26574
81.02
15.92
127.76
127.76

AP 1016

Comply with the Provisions
set forth in AP 1002 and
Reg Ed Safety Manual

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

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13. Post Maintenance Testing required and Acceptance Criteria.

Passing leakage is not excessive

14. Estimated manhours to perform job: E _____ IC _____ M 30 U _____

15. Maintenance Foreman Assigned: *Honisey*

16. QC Dept. review, if required in item No. 8 *Elanub* Date *12/5/78*

17. Supervisor of Maintenance approval to commence work: *DM Skorlen* Date *12-5-78*

18. Shift Foreman's approval to commence work *D. Jones* Date *12-5-78*

NR-P-1C-1422
 NR-P-2A *153,494*
Initial of Shift Foreman *153,494*
signature is not required. Tagging Application No.

N/A
Radiation Work Permit No.

19. Maintenance Foreman's comments on work performed: ******

*ADJUSTED JACKING ON NR-P-1A-B-C.
ADJUSTED JACKING ON NR-P-2B, 2C
REPAIRED NR-P-2A*

*Pass running test
with O.P.P.S. Pick-up
with 10,373*

1/10/79 *R. E. [Signature]*
Work Completed - Maintenance Foreman's Signature Date/Time

20. Work completed and component aligned for testing.

If S.F. signature *[Signature]* *1/10/79*
Initial not required. Shift Foreman's Signature Date

21. Testing completed and component released for normal use.

If S.F. signature *[Signature]* *1/10/79*
Initial not required. Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).

N/A *[Signature]* *1/12/79*
QC Department Date

23. Supervisor of Maintenance: Work request and procedure are and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

36 *[Signature]* *1/31/79*
Actual Manhours to perform job Supervisor of Maintenance Signature Date

WORK REQUEST APPROVAL
TMI Nuclear Station

10,374

18626

Unit No. 1

Work Request No. 17-2

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority IT A
M

W.O./Account No. T8003/5307 NPRD Form Req'd. No

Items 1 through 5 completed by originator

1. System: Nuc. RIVER

2. Component (name & number) NR-P2A, NR-P1B, NR-P2B, NR-PIC & NR-P3C; NR-S2
NR-S2A

3. Describe malfunction or modification and recommended corrective action.
EXCESSIVE PACKING LEAKAGE

BEST COPY AVAILABLE

4. Originator: d. whorton Date/Time: 1-22-77 0630

5. Originator's Supervisor's Signature MA T. King / MATH

Items 6 through 12 completed by Supervisor of Maintenance or Designee

6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____
Yes ___ No

7. a. Does the work require a Radiation Work Permit? Yes ___ No
b. Is an approved procedure required to minimize personnel exposure? Yes ___ No

8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work.
Yes No ___

9. Does the work have an effect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure.
Yes ___ No

10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.

10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

J. L. Leelinger Unit/Station Superintendent 12/4/78 Date

11. Plant status or Pre-requisite conditions required for performance of work.
Operating or shutdown

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:

Removal & replacement of manway & inspection covers OTSG ~~140144~~ P/B
Procedure for torquing auxiliary feedwater nozzle 7419 OTSG A+B

2. Purpose:

To retorque manways, hand holes and auxiliary nozzles

3. Description of system or component to be worked on.

OTSG A+B

4. References:

4.1 AP1002 Switching & Tagging *4.3 OTSG Instruction manual*
4.2 AP1003 Radiation protection manual *4.4 MP 1410-4-7.*
~~*4.3 Procedure 140144, Procedure for torquing auxiliary feedwater nozzles P/B*~~

5. Special Tools, Materials and Qualifications required.

5.1 Calibrated torque wrenches 0-2500 FT. lbs
5.2 Calibrated torque wrenches 0-500 FT lbs

6. Detailed Procedure (attach additional pages as required)

Attached procedure ~~140144~~ & procedure for torquing feedwater aux nozzles P/B

Supervisor of Maintenance recommends approval *[Signature]* Date *7-14-77*
HBS Shupman *9/16/77* *[Signature]* *9-16-77*
*PORC Recommends approval Chairman *[Signature]* Date *9-16-77*
*Unit/Station Superintendent Approval *[Signature]* Date *9-16-77*

*NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

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CONTROLLED COPY

John Chairman, Unit

1410-Y-7
Revision 2
05/31/77

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Station _____

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1410-Y-7

1. Procedure Title & No.:

Removal and Installation of Mirror Insulation

2. Purpose:

2.1 To remove and install mirror installation.

3. Description of system or component to be worked on:

3.1 See specific Work Request.

4. References:

- 4.1 AP 1002
- 4.2 AP 1003

5. Special Tools, Materials and Qualifications required:

5.1 None

6. Detailed Procedure (attach additional pages as required)

6.1 See Attached

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Supervisor of Maintenance recommends approval *R. M. Schaefer* Date 5-11-77

• PORC Recommends approval - Chairman *J. P. Poppe* Date 5-12-77

• Unit/Station Superintendent Approves *[Signature]* Date 5-21-77

*NOTE: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

Standing Procedure *[Signature]* Date 5/25/77
Supervisor - Q.C.

6.0 LIMITS AND PRECAUTIONS

- a. Initiate RWP prior to starting work (on systems containing radioactive material or in a Controlled Area).

6.1 Mark insulation prior to disassembly to insure it is installed correctly upon re-assembly.

NOTE: Insure gloves are worn during this step.

6.2 Loosen fastners and/or clamps (clamps may have to be pried open). Use a screwdriver and wooden block where necessary to accomplish this. Insure that both halves are supported, where applicable, when the clamps are loosened.

6.3 CAUTION: Check contamination levels of exposed piping. Store mirror insulation where it will not become dirty or damaged.

6.4 To reinstall, clean piping or vessel and install insulation in exactly the same position it was installed originally.

NOTE: Insure gloves are worn during this step. Assure that good fit up exists and joints are tight to eliminate convection currents and heat losses.

7.0 ACCEPTANCE CRITERIA

- 7.1 Insulation is reinstalled and proper fit up exists.
7.2 Mirror insulation is not dirty or damaged.

2.0 BEST COPY AVAILABLE

WR 19590

6.1 RETORQUE PRIMARY MANWAY STUDS

6.1.1 Remove insulation as required to gain access to OTSG upper (lower) primary manway in accordance with MP 1410-4-7.



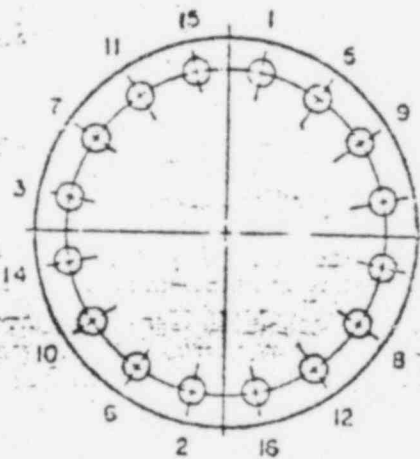
6.1.2 After the first pressurized heatup and cooldown cycle remove one nut at a time, relubricate and retorque to final torque value.

(in accordance with Figure #1 Below Felps N-1000 is a suitable high temperature lubricant.

Recheck final torque value in sequence for 3 cycles minimum or until nuts stop turning at 1925 ft.-lbs. torque.



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T. MEC 28
2/9/16/78

STEP	1	2	3	4	5
FOOT-LBS. TORQUE	385	770	1155	1540	1925

Figure #1

Primary Manway Cover Torque Values and Sequences

6.1.4

Bend tabs on nut locking washers.

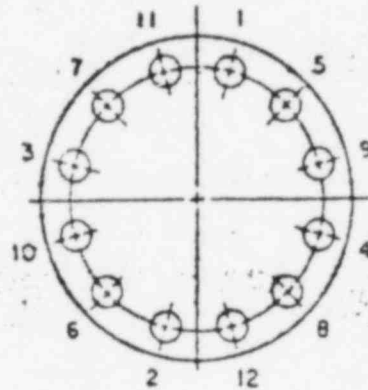
6.1.5.

Replace insulation removed in accordance with MP1410-4-7

6.2

Primary Inspection Cover Removal and Installation

Inspection covers of the primary side are ~~removed and~~ ^{retorqued} installed in the same manner as primary manway covers and with the same cleanliness requirements except torque to values shown in Figure 2. below



STEP	1	2	3	4	5
Foot-candle	50	100	150	200	250

Figure 2

Primary Inspection Cover Torque Values and Sequences

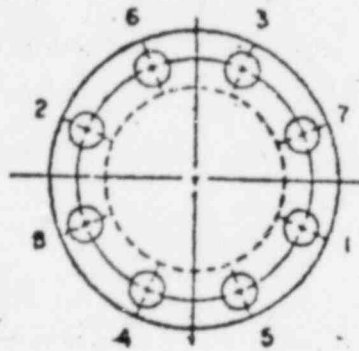
6.3

AUXILIARY FEED WATER NOZZLE FLANGE STUD RETORQUING

6.3.1 These flanges are retorqued in the same manner as the primary manways except that the appropriate torque values of figs 3 & 4 are used.

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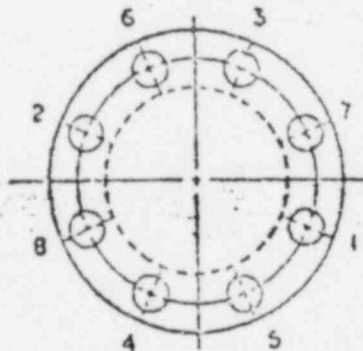
6.3.1 (continued)



STEP	1	2	3	4	5
FOOT-LBS. TORQUE	30	60	90	120	150

Figure ~~3~~ 3

HEADER-RISER FLANGE TORQUE VALUES AND SEQUENCES



STEP	1	2	3	4	5
FOOT-LBS. TORQUE	65	130	195	260	325

Figure ~~4~~ 4

AUXILIARY FEEDWATER NOZZLE TORQUE VALUES AND SEQUENCES

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ADDENDUM # 1 to W.R. 19590

1. If time and manpower ~~is~~ required to retorque OTSG manway/handhole studs becomes limiting, in the judgment of the Supervisor of Maintenance or the Unit Superintendent, then the provisions of this addendum may be substituted for those of the original W.R.

2. In lieu of removal, relubrication, and retorquing of stud nuts one at a time, these nuts may be simply rechecked for proper torquing in the sequence specified by the applicable torque chart figure under the following conditions:

a. Stud nuts which are determined to be inadequately lubricated must still be removed and properly lubricated and then properly torqued.

b. Two torque check passes (at least) are made.

c. OTSG closures torqued under these provisions shall be inspected at hot shutdown for signs of any leakage.

3. OTSG closures not completely torque checked in the available outage time must be closely inspected for leakage at hot shutdown conditions.

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Sup. of Maint. L.C. [unclear] 2/15/77 PORC H.S. [unclear] 7/15/77 Unit Sup. J.P. [unclear]
Rec. [unclear] 9-10-77 PORC [unclear] 2/15/77 9/15/77 SC [unclear]

A Steam
Monoway Nuts

- 11 ✓
- 12 ✓
- 13 ✓
- 14 ✓
- 15 ✓
- 16 ✓
- 17 ✓
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- 42 ✓
- 43 ✓
- 44 ✓
- 45 ✓
- 46 ✓
- 47 ✓
- 48 ✓
- 49 ✓
- 50 ✓

re-lubricated & re-torqued
Remainder returned same work.

The following A Steam Co. ~~Low~~ Low Monoway nuts were unlocked removed from studs, relubricated, reinstalled & re-torqued to specified setting. 3, 5, 7, 9, 11, 13, & 15. The remainder of the nuts were unlocked, & torques checked as per add #1. Job 9/14/77

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AP 1016

COMPLY WITH THE PROVISIONS
OF PART 19 OF THE RSR, 1968
AND MEET THE SAFETY REQUIREMENTS

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

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13. Post Maintenance Testing required and Acceptance Criteria.

All nuts are retorqued as per ~~item 3~~ attached procedure.

14. Estimated manhours to perform job: E _____ IC _____ M 160 U _____

15. Maintenance Foreman Assigned: Kernisey

16. QC Dept. review, if required in item No. 8 P.W. Cotton Date 9/16/77

17. Supervisor of Maintenance approval to commence work: [Signature] Date 9-17-77

18. Shift Foreman's approval to commence work Boh Date 9/17/77

Initial of Shift Foreman N/A Tagging Application No. 12786/11367
signature is not required. Radiation Work Permit No. 1/24/79
P. C. Patterson for S. Buehner

19. Maintenance Foreman's comments on work performed:

Torqued Top and Bottom Manways, Top Inspection cover Primary side of CTSC 1A, Torqued Top Manway, & Inspection cover Primary side of CTSC-1B. Torqued but supply 2 upper condenser flang on both CTSC 1A/1B. 9-21-77 Hef
(Note) Bottom Manway Primary side of CTSC 1B was not torqued due to the Radiation 25K. #7 Stud & 1/2" Orifice in Bottom CTSC 1B Primary Manway due to nut from 25K.

Work Completed - Maintenance Foreman's Signature _____ Date/Time _____

20. Work completed and component aligned for testing.

If S.F. signature _____ Shift Foreman's Signature _____ Date 1-16-79
Initial not required.

21. Testing completed and component released for normal use.

If S.F. signature _____ Shift Foreman's Signature _____ Date 1-16-79
Initial not required.

22. Quality Control Department review of work and testing completed (QC work only).

SZ 78-71 _____ QC Department _____ Date 2/1/79

23. Supervisor of Maintenance: Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature [Signature] Date 2/2/79

No NAME LIST

1401-44

WORK REQUEST APPROVAL

TMI Nuclear Station

Cancelled. Completed by Catalyst 27

Unit No. 1

Work Request No. 19590

Work Request Procedure (A.P. 1016 Sect. 6.0) should be used as a guide in filling out this form.

Priority ID

W.O./Account No. T8003/530.2 NPRD Form Req'd. No

Items 1 through 5 completed by originator

1. System: OTSG "A" & "B"

2. Component (name & number) Hand holes & manways & Aux Nozzles

3. Describe malfunction or modification and recommended corrective action.

After heatup and cooldown remove one (1) nut at a time, relubricate, and retorque to final value the following

- 1) OTSG "A" - ^{Upper & lower} manway, ^{on z-axis} Aux Nozzle, Handhole (pri)*
- 2) OTSG "B" - upper & lower manway, Aux Nozzle, Handhole (pri.)*

4. Originator: R.C. Troutman Date/Time: 4/7/77 1405

5. Originator's Supervisor's Signature [Signature]

Items 6 through 12 completed by Supervisor of Maintenance or Designee

- 6. Does work represent a change or modification to an existing system or component? If yes, the work must be approved via the change modification procedure before work can be performed. Notify Technical Services Dept. for assistance. (See A.P. 1016, Sect. 7.0) C/M No. _____ Yes _____ No
- 7. a. Does the work require a Radiation Work Permit? Yes No _____
b. Is an approved procedure required to minimize personnel exposure? Yes No _____
- 8. Is work on a QC component as defined in G.P. 1008? If yes, then answer questions 9 & 10; also Quality Control Dept. must review the work request prior to commencement of work. Yes No _____
- 9. Does the work have an affect on nuclear safety? If yes, the work must be performed using a PORC reviewed, Station Superintendent Approved procedure. Yes No _____
- 10. If the work does not have an effect on nuclear safety and no procedure is required per 7. b., the work may be performed without a PORC reviewed, Station Superintendent approved procedure.
- 10 a. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work request because the work has no effect on nuclear safety.

Unit/Station Superintendent Date

*RECEIVED
APR 10 1977
[Signature]*

11. Plant status or Pre-requisite conditions required for performance of work.
Shutdown

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

RETEST REVIEW AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

Canal / Same as WR 25056

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 18003/1001 NPRD Form Req'd No Work Request No. 25129
Priority 2A

Items 1 through 5 completed by originator 530.7 M

1. System: Nuclear River Water

2. Component (name & number) WR-P-1B

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Leaking tank
Repack

4. Originator: B. Kelly Date/Time: 9-4-79 0540

5. Originator's Supervisor's Signature R. Jones for Russ

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating

BEST COPY AVAILABLE

BEST COPY AVAILABLE

12. Limits and Precautions:

- a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear
- Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required
Tagging Application No. _____ Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____
Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required. _____ Shift Foreman's Signature _____ Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____ QC Department _____ Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____ Supervisor of Maintenance Signature _____ Date _____

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. I

W.O./Account 18003/1001

NPRD Form Req'd No

Work Request No. 24252

Priority 2 A

530.7

M

Items 1 through 5 completed by originator

1. System: NUCLEAR RIVER WATER PUMPS

2. Component (name & number) NR-P-1B

3. Describe malfunction and cause of malfunction (if known) or modification desired.

PACKING LEAKS EXCESSIVELY AND IS THROWING MUCH WATER.

4. Originator: [Signature]

Date/Time: 6-17-78 2200 HRS

Correct see WRA 23858

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?

If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No /

7a. Does work require an RWP Yes _____ No /

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No /

8a. Is work on a QC component as defined in GP 1008. Yes / No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No /

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent

Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No /

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

Date

11. Plant status or prerequisite conditions required for work.

operating

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman
signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

33041244 1989 1207 WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. T-003/530.7

NPRD Form Req'd No

Work Request No. 23136
Priority 11A

Items 1 through 5 completed by originator

M

1. System: NUC. SERVICE RIVER WATER

2. Component (name & number) NR-P-1B

3. Describe malfunction and cause of malfunction (if known) or modification desired.

NO LUBE WATER LOWER BRG. - BLOW OUT LINES

Cancel completed on WR.

4. Originator: MR Keating later Date/Time: 3/10/78 0230

5. Originator's Supervisor's Signature L. M. / M. Rose

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes _____ No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 102E Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work

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INTER-OFFICE MEMO

CATALYTIC, INC.

TO: D. Shovlin

AT Met-Ed

DATE: February 5, 1979
431

FROM: G. Huggins

AT Catalytic

COPY TO:

SUBJECT: Catalytic Work Request # 23579
Job Order # 10,373

Attached work request is for your review.

BEST COPY AVAILABLE

G. M. Huggins
G. M. Huggins

*2-9-79 GH:ef
Re: [unclear]*

*Reassign to Mich MAINT.
D.M.H. 2-13-79*

*Cancel
Purged*

*11-6-79
OK per
M. K. [unclear]
1/10/79
RET*

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M 20 U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman

Tagging Application No. _____

Radiation Work Permit No. _____

signature is not required

19. Comments on work performed:

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Retest met acceptance criteria

Yes No

Work Performed by date/time _____

Work Reviewed - Maintenance Foreman's Signature _____

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

CANCEL
Pumped
11-6-79

This is the original

10,373

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1 Work Request No. 23579
W.O./Account 2003/530.7 NPRD Form Req'd No Priority A

Items 1 through 5 completed by originator M

1. System: Nuclear River

2. Component (name & number) NR-P2A, NR-P1B, NR-P2B

3. Describe malfunction and cause of malfunction (if known) or modification desired.
Nuclear River Pump "B" (NR-P1B) shaft seal is leaking badly.
Nuclear River Booster Pump "B" (NR-P2B) shaft seal is leaking badly.
Nuclear River Booster Pump "A" (NR-P2A) shaft seal is leaking badly.

4. Originator: HL Carr Jr. Date/Time: 4/22/78 0630

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No _____

9. Agreement that a POR is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is No and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.

operating

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12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E IC M U

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman
signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

12. Limits and Precautions

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions set forth in AP 1002 and Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature _____

Date _____

22. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No. _____

QC Department _____

Date _____

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed in if as required. Machinery history entry has been made, if required.

Actual Manhours to perform job _____

Supervisor of Maintenance Signature _____

Date _____

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. I W.O./Account TE003/1001/530.7 NPRD Form Req'd No Work Request No. 25056 Priority 24
M

Items 1 through 5 completed by originator

- 1. System: Nuc. River
- 2. Component (name & number) NR PIB
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.

PACKING LEAKS.

Correl see WR# 23858

- 4. Originator: [Signature] Date/Time: 8/28/78 1230
- 5. Originator's Supervisor's Signature [Signature]

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 7a. Does work require an RWP Yes _____ No
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No
- 8a. Is work on a QC component as defined in GP 1008. Yes No _____
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes _____ No
- 9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent _____ Date _____
Unit Superintendent/Supervisor of Operations _____ Date _____

11. Plant status or prerequisite conditions required for work.

Operating

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12. Limits and Precautions

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

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13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E _____ IC _____ M _____ U _____

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift
Foreman

Tagging Application No. _____

Radiation Work Permit No. _____

signature is not required

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

Shift Foreman's Signature

Date

22. Quality Control Department review of work and testing completed (QC work only).

Supervisor of Maintenance

QC Department

Date

Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

Actual Manhours to perform job

Supervisor of Maintenance Signature

Date

Caval/Same as WR 25056

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. I
W.O./Account 1803/1001 | 530.7 | NPRD Form Req'd No | Work Request No. 25124
Priority 2 P
M

Items 1 through 5 completed by originator

- 1. System: NR
- 2. Component (name & number) NR-PIB
- 3. Describe malfunction and cause of malfunction (if known) or modification desired.

PACKING ON PUMP LEAKS VERY BADLY -
THROWS WATER ALL-OVER-THE-PLACE.

4. Originator: [Signature] Date/Time: 0530 HRS 9-2-78

5. Originator's Supervisor's Signature [Signature]

- 6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No /
- 7a. Does work require an RWP Yes _____ No /
- 7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No /
- 8a. Is work on a QC component as defined in GP 1008. Yes / No _____
- 8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes / No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

- 10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No /
- 10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes _____ No _____
- 10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent _____ Date _____

11. Plant status or prerequisite conditions required for work.

operating

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TEST/RETEST

Following valve installation, demonstrate that the valve or its connections will not leak at maximum system pressure (fuel tank at maximum level).

Submitted by: E. G. Skuchas
E. G. Skuchas
Ext. 137

Reviewed by: J. F. Fritzen
J. F. Fritzen
Ext. 184

Approved by: R. M. Klingsman
R. M. Klingsman 4/3/78
Manager-Generation Engineering
Ext. 101

Approved by: G. V. Troffer 4/4/78
G. V. Troffer
Manager-Generation Quality Assurance
Ext. 111

GJT:RMK:JFF:EGS:pg

- cc: J. G. Herbein*
- L. L. Lawyer*
- J. P. O'Hanlon
- R. O. Barley
- L. A. Fisher
- GRC Secretary
- GORB Secretary
- Task 6098

File: 63.0008.0007

METROPOLITAN EDISON COMPANY

Subsidiary of General Public Utilities Corporation

Subject C/M 1062 VALVE SUBSTITUTION FOR FS-P-3

Location Reading

To

Date March 31, 1978
GEM 1478

BACKGROUND

A $\frac{1}{2}$ inch plug cock valve is presently damaged on the fuel oil line between diesel fuel oil tank DF-T-3 and the diesel fire pump FS-P-3. There is no replacement valve available nor can the original be repaired. Technical Specification 4.18.2.2.a.1 requires that this fuel oil supply be available at all times; therefore, this valve must be operating correctly at all times.

DISCUSSION

C/M 1062 suggests that a $\frac{1}{2}$ inch gate valve be substituted permanently for the plug cock valve. The gate valve is available and meets the system requirements. Generation Engineering concurs with the safety evaluation as submitted.

ACTION

Generation Engineering approves the gate valve installation as a permanent replacement. TMI shall ensure that the gate valve is of good commercial quality and that it be rated at a minimum of 150 lb.

FSAR CHANGES

None.

DRAWING CHANGES

The manufacturer's drawing for this system shall be changed to reflect the valve substitution following completion of the work.

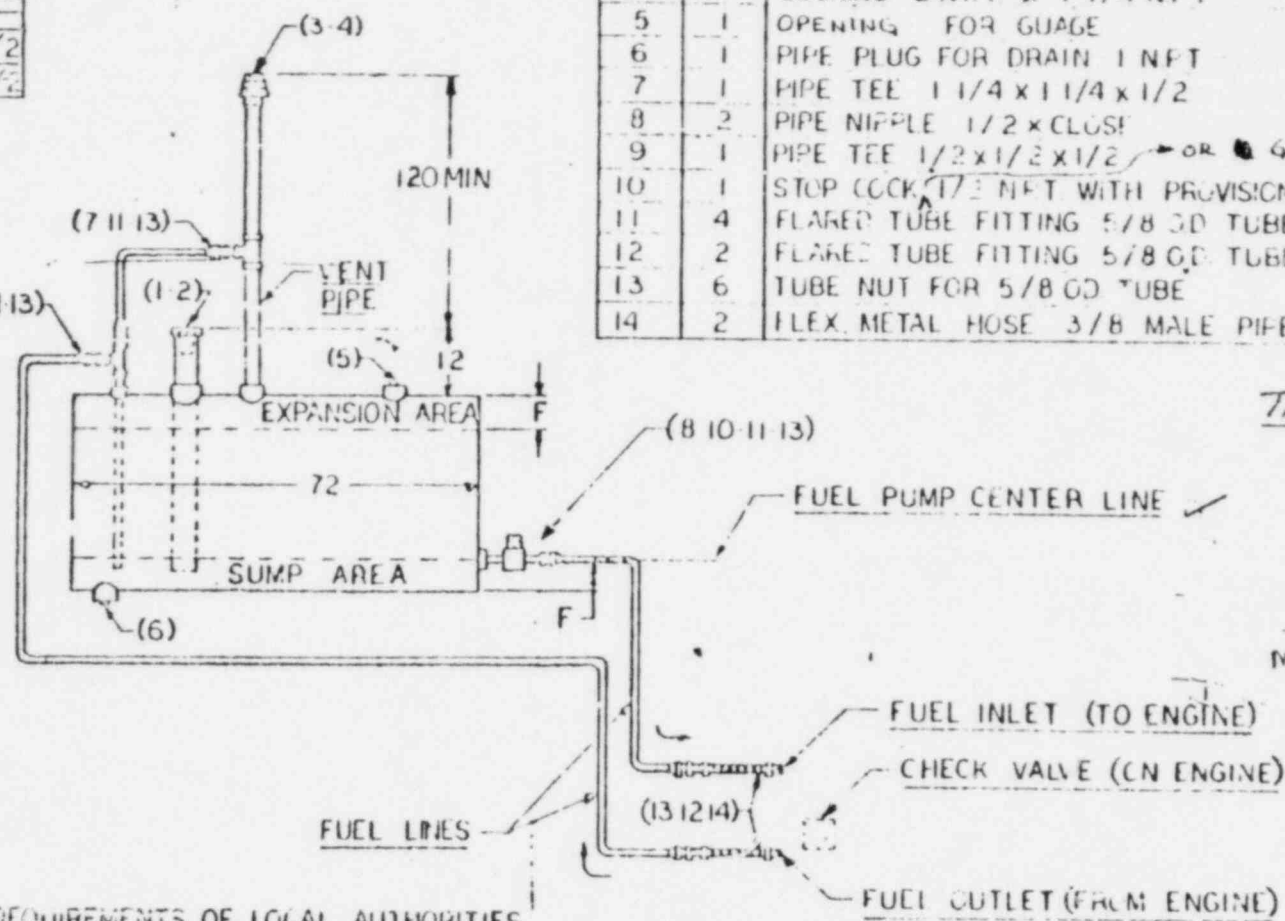
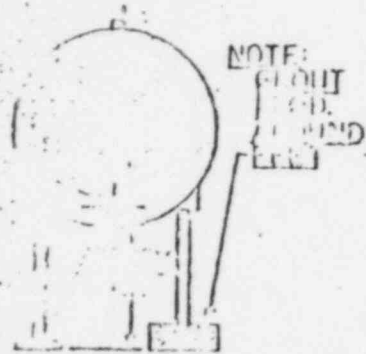
QA SYSTEMS LIST

No changes required.

ITEM	QNTY	DISCRIPTION
1	1	FILL CAP WITH PROVISIONS FOR PADLOCK (2" N.P.T.)
2	1	REMOVABLE STRAINER (MAX. 1/16 MESH)
3	1	FLASH ARRESTER 2 NPT
4	1	BUSHING 2 NPT x 1 1/4 NPT
5	1	OPENING FOR GAUGE (2 NPT) (6000 PSI)
6	1	PIPE PLUG FOR DRAIN 1 NPT
7	1	PIPE TEE 1 1/4 x 1 1/4 x 1/2
8	2	PIPE NIPPLE 1/2 x CLOSE
9	1	PIPE TEE 1/2 x 1/2 x 1/2 OR GAGE VALVE
10	1	STOP COCK 1/2 NPT WITH PROVISIONS FOR PADLOCK
11	4	FLARED TUBE FITTING 5/8 OD TUBE x 1/2 MALE PIPE
12	2	FLARED TUBE FITTING 5/8 OD TUBE x 3/8 FEMALE PIPE
13	6	TUBE NUT FOR 5/8 OD TUBE
14	2	FLEX. METAL HOSE 3/8 MALE PIPE

1 1/2	1 1/2
2	2-1/2
3	3-1/2
4	4-1/2

1	1
2	2
3	3
4	4



TAG No FS-P-3

ME-A 1/10-27-55
F. Section

IN ACCORDANCE WITH REQUIREMENTS OF LOCAL AUTHORITIES
 LOCATE TO ENGINE AS POSSIBLE AND LOCATE TANK OUT-
 LET FROM CENTER LINE.
 BASED ON "USABLE VOLUME" ONE GALLON TIMES
 "TOTAL VOLUME."
 (1) (2) (3) (4) AND VENT PIPE (1-1/4 PIPE) MUST BE
 TO CONFORM TO INDUSTRIAL JOB REQUIREMENTS
 THIS DRAWING NOT TO SCALE.
 CHANGE 12-13-55

PEERLESS PUMP
 HYDRODYNAMICS DIVISION FMC CORPORATION

DIESEL FUEL SYSTEM
 PER NFPA PAM 20 FIG.
 643B (UL 649B)
 REV 12-13-55

Unit No. 1

Change/Modification 1062
Work Request No. 25224

5. Nuclear Safety Evaluation

Does the Change/Modification:

- (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes no
- (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety and analysis report? yes no
- (c) reduce the margin of safety as defined in the basis for any technical specification? yes no

Details of Evaluation (Explain why answers to above questions are "no". Attach pages if required.)

THE SYSTEM AS IT PRESENTLY EXISTS IS INADEQUATE. THE INSTALLED 1/2" PLUG COCK VALVE CANNOT SUFFICIENTLY RETAIN FUEL IN DIESEL FUEL OIL TANK DF-T-3. TECHNICAL SPECIFICATION 4.17.2.2.G.1 REQUIRES THAT THE FUEL OIL STORAGE TANK MUST CONTAIN AT LEAST 250 GAL. OF FUEL. AN OPEN FUEL SUPPLY LINE MUST BE AVAILABLE AT ALL TIMES TO THE FIRE SERVICE DIESEL ENGINE. A SPARE PLUG COCK VALVE IS NOT READILY AVAILABLE AND AN INSTALLED 1/2" GATE VALVE CAN ADEQUATELY SATISFY BOTH OF THE ABOVE REQUIREMENTS.

SPARE 1/2" COCK-STOP VALVES WITH LOCKABLE HANDLES ARE ON ORDER. HOWEVER, THE GATE VALVE CAN ALSO BE LOCKED AND WILL BE USED AS A PERMANENT SOLUTION. A DRAWING CHANGE TO REFLECT THIS WILL BE REQUIRED. THEREFORE, THE INSTALLED GATE VALVE WILL BE SUFFICIENT AND WILL SATISFY SYSTEM REQUIREMENTS UNTIL REPLACEMENT OF THAT VALVE IS NECESSARY.

THIS CHANGE WILL NOT ALTER THE SYSTEM PERFORMANCE NOR WILL IT INCREASE THE PROBABILITY OF AN ACCIDENT OR SYSTEM MALFUNCTION BUT IT WILL INCREASE THE RELIABILITY OF THE SYSTEM AS IT PRESENTLY EXISTS.

*NOTE: If these questions are "yes", the change must receive N.R.C. approval.

Evaluation prepared by: Linda A. Fisher Date 3/23/78
Reviewed by: Bob Berley Date 3-23-78
Lead Engineer
Approved by: G. P. [Signature] Date 3-27-78
Unit Superintendent

M. WR 23224

MAJOR/MINOR CHANGE/MODIFICATION REQUEST FORM

TMI Nuclear Station

Unit No. 1

Change Modification No. 1062

Priority 10

Operator Training YES NO

QC YES X NO NO

1. System: FIRE SERVICE

2. Component: DF-T-3

3. Describe Change/Modification requested:

REPLACE 1/2" plug cock valve with 1/2" gate valve on DF-T-3 (DIESEL FUEL OIL TANK) TO FS-P-3 (DIESEL FIRE PUMP)

4. Reason for Change/Modification:

THE EXISTING 1/2" PLUG VALVE IS OPERATED WITH AN ADJUSTABLE WRENCH WHICH, AFTER SHORT USAGE, DAMAGED THE VALVE. THE VALVE IS PRESENTLY LEAKING AND CANNOT BE REPAIRED OR REPLACED. A 1/2" GATE VALVE CAN EASILY BE OPERATED AND IS READILY AVAILABLE.

5. Supervisor of Maintenance PC [Signature]

Date 3-23-78

6. Cognizant Engineer assigned LINDA A. FISHER

7. Does the work constitute a change to a system or component as described in the FSAR? Yes NO

8. If 7 above is "yes", does the change constitute an Unreviewed Safety Question? Yes NO N/A 2/23

9. If 8 is "yes", the work must receive NRC approval prior to performance. If 8 is "no", prepare and attach a detailed safety evaluation (page 2 of this form).

Lead Engineer [Signature]

Date 3-23-78

10. Station Superintendent/Unit Superintendent has taken the following action: (Check either a or b)

(a) Reviewed the change/modification and it does not constitute a change to a system or component as described in the FSAR.

(b) The change/modification is a change to a component or system described in the FSAR but the change does not constitute an Unreviewed Safety Question. A written safety evaluation has been prepared and forwarded to the Manager, Generation Engineering for concurrence and documentation.

(c) PORC review requested YES NO

NOTE: C.C. modifications must receive Mgr. Generation Engineering & Mgr. OQA approval.

Unit Superintendent [Signature] Date 3-27-78

Post Change/Modification Review and Follow-Up

11. Supervisor of Maintenance - All action on Work Request which performed this change/modification is complete.

Signature [Signature]

Date 5/25/79

12. Lead Engineer - Necessary follow-up action has been taken as listed below.

(a) Revised Drawings Submitted (list affected drawings) _____

(b) FSAR Changes Submitted (list affected section) _____

(c) Procedure Changes Submitted (list affected procedures) _____

(d) Preventive Maintenance Revised _____

(e) Necessary Spare Parts Ordered _____

Signature _____ Date _____

13. Unit Superintendent-Signature _____ Date _____

14. As Built Letter Number _____

- 6.0 Procedure to replace Fuel oil shut off valve for FS-P3
- 6.1 Drain Fuel oil tank DF-T3 to suitable container to allow replacement of valve.
- 6.2 Disconnect tubing fittings and replace damaged valve with new valve
- 6.3 Checked valve for leakage and proper operation

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.:
Replace Lock valve from DF-T3 to FS-P3
2. Purpose: *To replace plug cock valve from Diesel Fuel Tank (DF-T3) to Diesel fire pump (FS-P3).*
3. Description of system or component to be worked on:
Fire service Diesel FS-P3
4. References:
4.1 TMI Unit I AP1002
5. Special Tools, Materials and Qualifications required.
NONE
6. Detailed Procedure (attach additional pages as required)
6.1 Comply with ref 4.1
6.2 See attached procedure

Supervisor of Maintenance Recommends Approval *W. J. [Signature]* Date *3-20-78*
*Unit 1 PORC Recommends Approval _____ Chairman _____ Date _____ *Unit 2 PORC Recommends Approval _____ Chairman _____ Date _____
*Unit 1 Supt. Approval _____ Date _____ *Unit 2 Supt. Approval _____ Date _____
Supervisor Quality Control _____ Date _____

*NOTE: These approvals require only on Nuclear Safety Related/Radiation Work Permit Jobs.

WORK REQUEST APPROVAL

TMI Nuclear Station

Unit No. I

W.O./Account TR002/S29.5

NPRD Form Req'd 17

Work Request No. 23224

Priority 1D

Items 1 through 5 completed by originator M

1. System: Fuel Oil for FS-P-3

2. Component (name & number) LOCK-VALVE FOR ISOLATION ON FS-P-3 TANK

3. Describe malfunction and cause of malfunction (if known) or modification desired.

V/V is completely BROKE - VALVE MUST BE CHANGED USING A BETTER QUALITY OF MATERIAL. FUEL OIL TANK MUST BE DRAINED TO CHANGE V/V.

CHANGE/MOD.
REVIEWED GEM 1478

4. Originator: J. W. Randle

Date/Time: 3/19/78 1430

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?

If yes, an approved change modification is required per AP 1021.

C/M No. 1062 Yes No

7a. Does work require an RWP Yes No

7b. Is an approved procedure required to minimize personnel exposure. Yes No

8a. Is work on a QC component as defined in GP 1008. Yes No

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 8a is Yes and 8b is No).

[Signature]
Unit Superintendent

3/20/78
Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes No

10b. If 10a is Yes, is an approved procedure required to limit environmental impact. Yes No

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations

Date

11. Plant status or prerequisite conditions required for work.

Revision 0
8/2/74

- 8.8 If repack is required, loosen gland and remove gland nuts.
Slide packing out of way.
- 8.9 Remove old packing using packing puller.
- 8.10 Cut new packing rings to fit stem and stuffing box.
- 8.11 If packing is to be ribbon pack, wrap stem as tight as possible to fit stuffing box. After each ring of ribbon pack draw down packing gland. Continue to add packing until gland is in position to be tightened periodically as leakoff develops.
- 8.12 If packing rings are to be used, put new rings in stuffing box and put gland in hand tight for each ring to be added. (Stagger butt ends 90°)
- 8.13 Adjust gland to obtain desired leakoff and free stem movement.
- 8.14 CAUTION: Insure gland is taken up evenly by adjusting each gland nut in alternately small increments to prevent binding of the packing on stem, and to prevent gland cocking.
Measure distance from bonnet to lip of gland to insure gland is in straight.

THREE MILE ISLAND NUCLEAR STATION
Unit #1 Corrective Maintenance Procedure 1410-V-13
ADD, REPACK OR ADJUST VALVE PACKING

8.0 PROCEDURE

- 8.1 Tighten gland nuts until packing leak is reduced or stopped. The gland should be taken up evenly to avoid having the gland cocked. This is done by tightening gland nuts alternately, approximately 1/2 turn at a time.
- 8.2 After the leak is reduced or stopped, measure the distance from the valve bonnet to the top of the gland to insure the gland is straight.
- 8.3 Insure that during gland tightening the top of the gland does not contact the bonnet.
- 8.4 If repacking is required or rings are to be added proceed below.
- 8.5 If a ring or several rings are to be added loosen packing gland and remove gland nuts. Slide gland out of way.
- 8.6 Cut packing rings to fit system. If ribbon pack is desired, wrap ribbon pack around stem and tighten gland. Remove gland and add additional ribbon pack, if necessary. Place desired rings (if not using ribbon pack) in stuffing box and seat gland on top of ring to force top ring to contact next ring down.
- 8.7 Tighten gland evenly to get desired leakoff.

CAUTION: Alternately tighten gland nuts in small increments so that gland does not cock and packing does not bind stem.

10-7-13

Work Request Form

Revision 6
8/2/74

TMI Nuclear Station
Maintenance Procedure Format and Approval

Unit No. 1

CONTROLLED COPY

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form additional pages may be attached as required. Work Request procedure A.P. 1016 Sect. 6 should be used as a guide in preparing the maintenance procedure

1. Procedure Title & No.: 10-7-13 ADD, REPACK OR ADJUST VALVE PACKING

2. Purpose:
2.1 To add packing, to repack or tighten packing gland on QC/Nuclear Safety Related Syst

3. Description of system or component to be worked on.
** 3.1 All valves having removable packing.

4. References:
4.1 Vendor Tech Manual for applicable valve.
4.2 AP 1002 Rules for Protection of Men Working on Electrical & Mechanical Apparatus.
4.3 AP 1003 Rules for Radiation Protection.

5. Plant Status or Prerequisite Conditions required for performance of work.
** 5.1 Valve to be isolated.

6. Limits and precautions:
(a) Personnel Insure line is depressurized.
(b) Equipment Do not tighten valve to bottoming position, insure gland is not cocked.
(c) Environment N/A
(d) Nuclear N/A
6.1 AP 1002, AP 1003 to be followed.

7. Special Tools, Materials and Qualifications required.
7.1 Packing puller
7.2 Wrenches of appropriate size
7.3 Knife
7.4 QC approved packing
7.5 Pocket Rule

8. Detailed Procedure (attach additional pages as required)
SEE ATTACHED PROCEDURE.

9. Post Maintenance Testing required and Acceptance Criteria:
9.1 Valve packing reduced to an acceptable level of leakage.
9.2 Valve operates and cycles properly after adjustment/repacking.

GPU Test Superintendent approval of test (during S/U only) R. T. Tol

Supervisor of Maintenance recommends approval [Signature] Date 5-1-74

*PORC recommends approval - Chairman [Signature] Date 5-1-74

*Station Superintendent/Asst. Superintendent Approval [Signature] Date 5-1-74

*Note: These approvals required only on Q.C. or Radiation Work/Permit jobs.

**Note: These sections are not required to be filled in prior to use for generic procedures which are prepared before their need arises. These two sections may be approved prior to use by telephone call to the PORC Chairman and Superintendent/Assistant Superintendent.



MET-ED

Quality Control

ACCEPT

Purchase Order 46174

Item No. 13

Q.C. Inspector [Signature] Date 10/10/74

MET-ED

Quality Control

ACCEPT

Purchase Order #22219

Item No. 16

Q.C. Inspector [Signature] Date FEB 23 1976

GPF 4008.004
12-31-74 Rev. 0

TMI-65A 4-75

MET-ED

Quality Control

ACCEPT

Purchase Order #22219

Item No. 16

Q.C. Inspector [Signature] Date FEB 23 1976

GPF 4008.004
12-31-74 Rev. 0

TMI-65A 4-75



DATE	REPORT	COMPLETION	STATUS	REMARKS	DATE	STATUS	REMARKS	DATE	STATUS	REMARKS	DATE	STATUS	REMARKS	DATE	STATUS	REMARKS	DATE	STATUS	REMARKS	
1	FW-17A																			
2	Handwritten																			
3		NO																		
4		APD																		
5		NUMBERS																		
6		NO																		
7		YES																		
8		FORWARDED																		
9		W/P																		
10		W/P																		
11		W/P																		
12		W/P																		
13		N/A																		
14		see below																		
15		W/P																		
16		W/P																		
17		W/P																		
18		W/P																		
19		W/P																		
20		See below																		
21																				

Handwritten notes on the right margin, including a date '12/11/10' and other illegible scribbles.

Comply with the Provisions
set forth in AP 1002 and
Met Ed Safety Manual

- 12. Limits and Precautions:
 - a) Personnel
 - b) Equipment
 - c) Environment
 - d) Nuclear

13. Post Maintenance Testing required and Acceptance Criteria. *Packing gland does not leak. Valve*

14. Estimated manhours to perform job: E ___ IC ___ M 12 U ___ *operates with out binding.*

15. Maintenance Foreman _____

16. QC Dept. review, if required in item No. 8
QC Supervisor *see attached* Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work *B. Nelson* Date *11-14-77*

Initial if Shift Foreman signature is not required

Tagging Application No. _____

N/A
Radiation Work Permit No. _____

19. Comments on work performed: *11-14-77 Back seat would not hold. Backed off on packing gland nuts. Packing gland moved out under pressure. Cleaned packing gland and lubricated with fillets. Tightened packing gland. Cycled valve 6x. Repair valve during cold shut down.*

Removed old packing and repacked with 1 Ring of 187-I and the rest with Graphoil packing. No lantern ring

Retest met acceptance criteria Yes No

Work Performed by date/time _____ Work Reviewed - Maintenance Foreman's Signature _____

Date _____

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

D. L. Catlett *11/27/78*
Shift Foreman's Signature Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

D. L. Catlett *11/27/78*
Shift Foreman's Signature Date

22. Quality Control Department review of work and testing completed (QC work only).

N/A *QC Plans* *12/1/78*
Surveillance Report No. QC Department Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

12 *Personnel* *12/4/78*
Actual Manhours to perform job Supervisor of Maintenance Signature Date

WORK REQUEST APPROVAL
TMI Nuclear Station

Unit No. 1
W.O./Account No. T8003/530.7

NPRD Form Req'd No

Work Request No. 21910
Priority 10
M

Items 1 through 5 completed by originator

1. System: Feed Water

2. Component (name & number) FW-V17A

3. Describe malfunction and cause of malfunction (if known) or modification desired.

Packing gland out of adjustment. Add as repair valve. 3/8" packing 187 I 1 1/8" P.B. nuts

4. Originator: Neal Hernandez

Date/Time: 11-14-77

5. Originator's Supervisor's Signature [Signature]

6. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.

C/M No. _____ Yes _____ No

7a. Does work require an RWP Yes _____ No

7b. Is an approved procedure required to minimize personnel exposure. Yes _____ No

8a. Is work on a QC component as defined in GP 1008. Yes No _____

8b. If 8a is yes does work have an effect on Nuclear Safety? If 8b is yes, PORC reviewed Superintendent approved must be used. Yes No _____

9. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety: (Applies only if 8a is Yes and 8b is No).

Unit Superintendent Date

10a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No _____

10b. If 10a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____

10c. Agreement that 10b is No. (Required only if 10a is Yes).

Unit Superintendent/Supervisor of Operations Date

11. Plant status or prerequisite conditions required for work.
31.0

DESIGNATED END USE DATA

N I II III SYSTEM APPLICATION

S I II III (TAG NOS.)

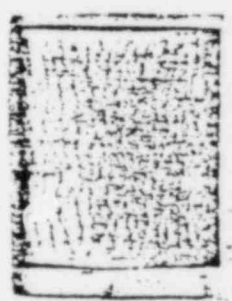
D/M OR SPEC. NO. P0161

COMMENTS

C



THIS TAG IS NOT TO BE REMOVED
UNTIL MATERIAL IS INSTALLED
IN A DESIGNATED END USE.



PART-ED

Quality Control

ACCEPT

P.O. NO. 43307 ITEM NO. 4
Q.C. INSP. Panel 1 DATE 3/30/77

GPF 4008.003

TMI-65A REV. 11-76



METED TMI UNIT	
NOUN NAME <i>Value</i> <i>214K125</i>	DESCRIPTION <i>3/4" 600# Plate Value</i> <i>1/4 P.G.</i> <i>5500W-1-XMY14</i>
STOCK NUMBER <i>797-016-1500-1</i>	SYSTEM/TAG NUMBER <i>214K RO-161</i>
P.O. NUMBER <i>43307-4</i>	SIZE <i>3/4" 600#</i>
	QUANTITY <i>1</i>



- 6.9 IF repack is required, loosen gland and remove gland nuts. Slide packing out of way.
- 6.10 Remove old packing using packing puller.
- 6.11 Cut new packing rings to fit stem and stuffing box.
- 6.12 If packing is to be ribbon pack, wrap stem as tight as possible to fit stuffing box. After each ring of ribbon pack draw down packing gland. Continue to add packing until gland is in position to be tightened periodically as leakoff develops.
- 6.13 If packing rings are to be used, put new rings in stuffing box and put gland in hand tight for each ring to be added. (Stagger butt ends 90°)
- 6.14 Adjust gland to obtain desired leakoff and free stem movement.
CAUTION: Insure gland is taken up evenly by adjusting each gland nut in alternately small increments to prevent binding of the packing on stem, and to prevent gland cocking.
- 6.15 Measure distance from bonnet to lip of gland to insure gland is in straight.
- 6.16 If valve is a motor operated ISI valve, measure the stroke time per the applicable surveillance procedure.
- 7.0 ACCEPTANCE CRITERIA
- 7.1 Valve packing leakoff is per vendor's recommendation.
- 7.2 If valve is motor operated and within ISI scope, its stroke time must be within its limit as found in applicable surveillance procedure.

THREE MILE ISLAND NUCLEAR STATION
STATION CORRECTIVE MAINTENANCE PROCEDURE 1410-V-13
ADD, REPACK OR ADJUST VALVE PACKING

6.0 PROCEDURE

6.1 Limits and Precautions

- a. Insure line is depressurized.
- b. Do not tighten packing to bottom position.
- c. Do not cock gland.

6.2 Tighten gland nuts until packing leak is reduced or stopped. The gland should be taken up evenly to avoid having the gland cocked. This is done by tightening gland nuts alternately, approximately 1/2 turn at a time.

6.3 After the leak is reduced or stopped, measure the distance from the valve bonnet to the top of the gland to insure the gland is straight.

6.4 Insure that during gland tightening the top of the gland does not contact the bonnet.

6.5 If repacking is required or rings are to be added proceed below.

6.6 If a ring or several rings are to be added loosen packing gland and remove gland nuts. Slide gland out of way.

6.7 Cut packing rings to fit system. If ribbon pack is desired, wrap ribbon pack around stem and tighten gland. Remove gland and add additional ribbon pack, if necessary. Place desired rings (if not using ribbon pack) in stuffing box and seat gland on top of ring to force top ring to contact next ring down.

6.8 Tighten gland evenly to get desired leakoff.

CAUTION: Alternately tighten gland nuts in small increments so that gland does not cock and packing does not bind stem.

WORK REQUEST PROCEDURE
TMI Nuclear Station
Maintenance Procedure Format and Approval

1410-V13
Revision 1
05/09/78

CONTROLLED COPY
Mech. Maint. Dept.
Unit 1

Unit No. 1 & 2

This form outlines the format and acts as a cover sheet for a maintenance procedure. Due to the limited size of the form, additional pages may be attached as required. Work Request procedure AP 1016 Section 6 should be used as a guide in preparing the maintenance procedure.

1. Procedure Title & No.: 1410-V-13
Add Repack or Adjust Valve Packing.

2. Purpose:
To add packing, to repack or tighten packing gland.

3. Description of system or component to be worked on.
Any valve having removable packing.

4. References:
1. Vendor Tech. Manual for Applicable valve.
2. AP 1002 Rules for the Protection of Employees Working on Electrical & Mechanical Apparatus.
3. AP 1003 Radiation Protection.

5. Special Tools, and Materials required.
1. Packing Puller
2. Hand tools as required
3. Additional Packing.

6. Detailed Procedure (attach additional pages as required)
See Attached.

Supervisor of Maintenance recommends approval Jim Menden Date 5-3-78

• PORC RECOMMENDS APPROVAL

Unit No. 1 Chairman [Signature] Date 5/2/78

Unit No. 2 Chairman [Signature] Date 5/5/78

• UNIT SUPERINTENDENT APPROVAL

Unit No. 1 [Signature] Date 5/4/78

Unit No. 2 [Signature] Date 5/5/78

• Standing Procedure

[Signature]
Supervisor of QC

[Signature]
Date

*Note: These approvals required only on Nuclear Safety Related/Radiation work permit jobs.

JOE TICKET (WORK REQUEST)
REVIEW - CLASSIFICATION - ROUTING CONTROL FORM

JOB TICKET (WORK REQUEST) NUMBER _____

12. Retest met acceptance criteria Yes No

13. Work Performed by date/time Work Reviewed - Maintenance Foreman's Signature

Richards

3/1/79
Date

WMD
Signature

14. Work completed and component aligned for testing.

Initial if S. F. signature is not required.

R. Parnell
Shift Foreman's Signature

4-12-79
Date

15. Testing completed and component released for normal use.

Initial if S. F. signature is not required.

Shift Foreman's Signature

Date

16. Quality Control Department review of work and testing completed (QC work only).

Surveillance Report No.

QC Department

Date

17. Supervisor of Maintenance Job Ticket (Work Request) and procedure are complete and signed off as required. Change/modification form has been signed off as required.

Supervisor of Maintenance Signature

Date

JOB TICKET (WORK REQUEST)
REVIEW - CLASSIFICATION - ROUTING CONTROL FORM

JOB TICKET NUMBER 00516

1. Does work represent a change or modification to an existing system or component?
If yes, an approved change modification is required per AP 1021.
C/M No. _____ Yes _____ No
- 2a. Does work require an RWP Yes No _____
- 2b. Is an approved procedure required to minimize personnel exposure. Yes No _____
- 3a. Is work on a QC component as defined in GP 1008. Yes No _____
- 3b. If 3a is yes does work have an effect on Nuclear Safety? If 3b is yes, PORC reviewed Superintendent approved procedure must be used. Yes No _____
4. Agreement that a PORC reviewed, Superintendent approved procedure is not required for this work because it has no effect on nuclear safety. (Applies only if 3a is Yes and 3b is No).

Unit Superintendent

Date

- 5a. Is the system on the Environmental Impact list in AP 1026 Yes _____ No
- 5b. If 5a is Yes, is an approved procedure required to limit environmental impact Yes _____ No _____
6. Agreement that 5b is No. (Required only if 5a is Yes).

Unit Superintendent/Supervisor of Operations

Date

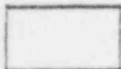
7. Plant status or prerequisite conditions required for work. shut down
8. QC Dept. review, if required in item No. 3

QC Supervisor Colonie

Date 2/27/79

9. Supervisor of Maintenance approval to commence work: UMD for T. Harkins Date 2/27/79
10. Maintenance Foreman Assigned: W. Donahue

11. Shift Foreman's approval to commence work DRP st Date 3-2-79



Initial if Shift
Foreman
signature is not required

Radiation Work Permit No.

GENERATION CORRECTIVE MAINTENANCE SYSTEM
JOB TICKET FORM (WORK REQUEST)-THREE MILE ISLAND

UNIT 1

R. Paul
RECOMMENDED PRIORITY

COMPONENT DESIGNATION				LOCATION / UNIT	JOB TYPE	JOB TICKET NUMBER	REQUEST DATE		
SYS	COMP TYPE	COMP ID	MO				DAY	YR	
MS	V	1048		035001	CM	005160	31	7	79

Handwritten notes:
10/10/79
10/11/79

DESCRIBE MALFUNCTION OR MODIFICATION DESIRED

PACKING LEAK NO OPS ID TAG 4UMS

CAUSE OF MALFUNCTION (IF KNOWN)

ORIGINATOR'S EMP. NO.
06214

Handwritten: ABS [Signature] 2/17/79
ORIGINATOR'S SIGNATURE DATE

SUPERVISOR'S EMP. NO.
0

Handwritten: [Signature] 2-17-79
SUPERVISOR'S SIGNATURE DATE

Handwritten: T805/1027/530.8

WORK ORDER NUMBER		GC CODE	ACCOUNT NUMBER	PLANT CONDITION						NPRD FAILURE			START	
LOCATION	SERIAL			SU	UP	HO	CO	RF	HS	LR	YR	MO	DAY	HR
0350	02008JW		5308	0	0	0	1	1	0	0				

CHANGE NO	NUC SAFETY	REG AGENCY CODE	CHG/MOD NUMBER
0110			

ENV CODE	OUTAGE CAUSE CODE
X	

STATUS HOLD CODE

S.W. APPROVAL COMMENCE WORK
MO DAY YR
022779

RESP. LOCATION OR CONTRACTOR
1035M

EXTRA Work Form ID Completed

Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Stamp: COMPLY WITH THE PROVISIONS SET FORTH IN AP1008, 1003 AND THE 10 SAFETY MANUAL

Post Maintenance Testing required and Acceptance Criteria.

Handwritten: Step 7.03 1410-V-13

ORIGINATOR — SUPERVISOR — SUPERVISOR OF MAINTENANCE — MAINTENANCE FOREMAN —
JOB PERFORMER — MAINTENANCE FOREMAN — SUPERVISOR OF MAINTENANCE

12. Limits and Precautions:

- a) Personnel
- b) Equipment
- c) Environment
- d) Nuclear

Comply with the Provisions
set forth in AP 1002 and 1003
Met Ed Safety Manual

BEST COPY AVAILABLE

13. Post Maintenance Testing required and Acceptance Criteria.

14. Estimated manhours to perform job: E ___ IC ___ M ___ U ___

15. Maintenance Foreman Assigned: _____

16. QC Dept. review, if required in item No. 8

QC Supervisor _____ Date _____

17. Supervisor of Maintenance approval to commence work: _____ Date _____

18. Shift Foreman's approval to commence work _____ Date _____

Initial if Shift Foreman signature is not required

Tagging Application No. _____

Radiation Work Permit No. _____

19. Comments on work performed:

Retest met acceptance criteria

Yes No

Work Performed by date/time

Work Reviewed - Maintenance Foreman's Signature

_____ Date

20. Work completed and component aligned for testing.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature

_____ Date

21. Testing completed and component released for normal use.

Initial if S.F. signature is not required.

_____ Shift Foreman's Signature

_____ Date

22. Quality Control Department review of work and testing completed (QC work only).

_____ Surveillance Report No.

_____ QC Department

_____ Date

23. Supervisor of Maintenance Work request and procedure are complete and signed off as required. Change/modification form has been signed off as required. Machinery history entry has been made, if required.

_____ Actual Manhours to perform job

_____ Supervisor of Maintenance Signature

_____ Date