

TMI DOCUMENTS

DOCUMENT NO: TM-0636

COPY MADE ON 4/5/79 OF DOCUMENT PROVIDED BY
METROPOLITAN EDISON COMPANY.

JIA
Supervisor, Document Control, NRC

7906180661

228 287

2/1/78

SYSTEM: Aux Building H & V

TP NO. SP2 MTX NO. 2

PROBLEM DESCRIPTION: During the conduct of SP2 - FILTER TESTING
the Bypass Damper AH-D-4020A leaked. This is unacceptable.
INSTALL A ZERO LEAKAGE type Damper at this location. Also
INVESTIGATE the Bypass Dampers around the Fuel Handling
Building Filters (AH-D-5683, AH-D-5890)

BY: T.M. Hawkins

ORGANIZATION: GPU S/Y

DATE: 2-14-78

FOR RESOLUTION BY: Brownwell - BER
Priority 1 TMA - 2-14-78 2/17/78

DATE SENT: 2-14-78

PROPOSED RESOLUTION:

See ECM ~~5594~~ x Rev. 1
55915
gjd

BY: [Signature]

DATE: 4/8/78

FOR ACTION BY: T. FAULKNER

DATE SENT: 7-10-78

ISSUED FO 2513, R1 To
ACCOMPLISH ECM 5-5915, R1.
No FURTHER ACTION.

228 288

CC A.S. Dam
R. Casperic
S. Morrison

ACTION COMPLETED
SATISFACTORILY BY
[Signature]
DATE 7/10/78

TML UNIT NO. 2
BURNS AND ROE, INC.
ENGINEERING CHANGE MEMO
(REV 12/75)

COST EST. \$500.
B&R QIR/PB DATE 3/24/78
GPU QIR DATE 3/24/78

SERIAL NO. S-5915 RL
DISCIPLINE HVAC/ELECT
SUBJECT A.B. & F.H. - BYPASS DAMPERS

ATTACHMENTS 6
Sheet 1 of 2

REFERENCES: PR 2646

F.O. 2042
F.O. 2343

AREA:
+ FIELD SOLUTION

DISTRIBUTION
UE&C
JOB ENGINEER(2)
GEN SUPT.
SUIT. UNIT 2
QC SPVSR.
GPU
ASST. PROJ. MGR
CONST. ENG.(2)
QA SPVSR.
B&R
SEE PP-74

CHANGE:

BLOCK OFF THE FOLLOWING DAMPERS ON EITHER THE UPSTREAM OR DOWNSTREAM SIDE WITH 18 GAUGE SHEET METAL MAKING SURE ALL JOINTS ARE AIRTIGHT: AMD-5890; D5623; AND D-4020A.

IN TERM. BOX IT 3112 LIFT AND TAG WIRE "45" OF CABLE IT2782C. IN TERM BOX IT3119 LIFT AND TAG WIRE "81" OF CABLE IT3120C. WIRES SHOULD BE TAGGED TO INDICATE THEIR REMOVAL PER THIS E.C.M.

Rev 1: See Sheet 2 of 2

+
DESIGNER APPROVAL _____ DATE _____

REASON FOR CHANGE:

EXISTING BYPASS DAMPERS ARE NOT LEAK TIGHT. A REVISION TO THIS ECM WILL EITHER SPECIFY THE ADDITION OF ZERO LEAKAGE DAMPERS OR PERMANENTLY REVISE SYSTEM TO DELETE BYPASS, DEPENDING ON GPU DECISION.

M. Maher OK
QIR 15 3/24/78
B&R ENGINEER DATE

L. Brumwell OK
ASD
PROJECT ENGINEER

228 289

FOLLOW-UP ACTION
REVISE SPEC. NO
REVISE DWG. NO

ACKNOWLEDGEMENT:

UE&C - NAME

DATE

DISCIPLINE SUPERINTENDENT
RESPONSIBLE FOR IMPLEMENTATION

NAME _____ DISCIPLINE _____
GPU TEST SUPT.

TMI UNIT NO. 2
 BURNS AND ROE, INC.
 ENGINEERING CHANGE MEMO
 (REV 12/75)

COST EST. ~~18000.00~~
 B&R ~~RPB~~ DATE ~~6/20/78~~
 GPU ~~JOB~~ DATE ~~6/27/78~~

SERIAL NO. 55915 Rev. 1
 DISCIPLINE HVAC/ELECT.
 SUBJECT D4020A, 5683, 5890
 ATTACHMENTS 6

REFERENCES: PR 2046

- 63-11.0026
- 2230 R14
- 2231 R22
- 2343 R18 *
- 2042 R16 *
- B&R INSTRUMENT LIST *

AREA:
 + FIELD SOLUTION

DISTRIBUTION
 UE&C
 JOB ENGINEER(2)
 GEN SUPT.
 SUPT. UNIT 2
 QC SPVSR.
 GPU
 ASST. PROJ. MGR.
 CONST. ENG. (2)
 QA SPVSR.
 B&R
 SEE PP-74

CHANGE: CATALYTIC TO PURCHASE THREE (3) DAMPERS, ACQUARDS, & ACCUMULATOR BOTTLES FROM MOSSER INDUSTRIES, INC. AS DETAILED ON ATTACH. 1-4. MOSSER INDUSTRIES IS TO SEND THEIR CERTIFIED DWG'S TO R. GASPER SIC 29 PARK PLACE, PARAMUS, N.J. FOR APPROVAL BEFORE FABRICATING OR SHIPPING ANYTHING.

DAMPERS D 4020A, 5683, & 5890 ARE TO BE SENT TO MET-ED SPARE PARTS FOR STORAGE. HANGERS FOR THE NEW DAMPERS WILL BE SHOWN ON A REV. TO THIS ECM.

THE NEW DAMPERS ARE TO BE INSTALLED AS SHOWN ON ATTACH'S 576 & 2230 & 2231. B&R TO REVISE 2042, 2343, & B&R INSTRU. LIST AS SHOWN ON ATTACH'S 546. THE 'B' PORT OF SOLENOID VALVES AH-EP-5290, 5890, & 5683 IS TO BE UNPLUGGED TO PIPE UP THE NEW ARRANGEMENT SINCE THE DAMPERS ARE AIR-TO-OPEN / AIR-TO-CLOSE. THE SOLENOID & ACCUATOR ARE TO BE ARRANGED SO ENERGIZING THE SOLENOID OPENS THE DAMPER. THE CABLES ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION PRIOR TO RELO TO THIS ECM.

+
 DESIGNER APPROVAL _____ DATE _____

REASON FOR CHANGE: TO PROVIDE DAMPERS WHICH HAVE A LEAKAGE OF .11190 IN THE AUX BLDG AND .31190 IN F.H. B'LDG IN THE EXHAUST FILTER BY-PASS.

R. Castiello
K. Porter
N. Baker 6/20/78 R. Brownell ASD
 B&R ENGINEER DATE PROJECT ENGINEER

228 290

FOLLOW-UP ACTION
 REVISE SPEC. no
 REVISE DWG. yes*

ACKNOWLEDGEMENT:

 UE&C - NAME

 DATE

DISCIPLINE SUPERINTENDENT RESPONSIBLE FOR IMPLEMENTATION
 NAME DISCIPLINE
R. Jule GPU S/U



MOSSER INDUSTRIES, INCORPORATED

P. O. Box 1246 • Allentown, Pennsylvania 18105
(212) 434-7112

An **ICI** subsidiary

LOUVER SPECIFICATION

CUSTOMER BURNS AND ROE

DATE March 1, 1978

INQUIRY/ORDER Pa. P & L - 3 mile Island, Unit #2

QUOTATION I-9737

SHEET 1 OF 2 BY Lcs.

Our Attached Quotation is for Construction and Materials Indicated on this form. Any Deviation May Result in Price Revision.

CUSTOMER SPECIFICATIONS

Item	1
Quantity/Location	1
Flue Orientation	
Flow Media	Clean air exhaust
Temperature	Normal Maximum 120°F
Flow Volume	Normal 65,000 ACFM Maximum
Pressure	Maximum Shut-Off -10"WC
Operation	Throttling On-Off

REVISIONS

DATE

REQ'D:
TAG # IS D-4020A

DAMPER DESCRIPTION

Size	Width 36" Height 54" F. to F. 15"
Type Link Louver	Parallel X Opposed
No. Blades/Orientation	Horizontal 2b1 X 36" 1a Vertical
Flange Width	4"
Torque Req'd	1143 ft. lbs.
Operating Time	Dependent upon operating accessories customer uses
Pressure Drop/Full Open	0.1"WC
Leakage	72 ACFM @ 10"WC & 120°F
Weight	1055# net, 1100# shipping

DAMPER MATERIALS

Price

Frame	Carbon Steel
Blade	Carbon Steel
Shafts/Dia.	450 Stainless Steel 1-1/2"
Bearings	Outboard, self-lubed
Packing	Inboard, self-lubed asbestos
Seals	316 L Stainless Steel
Linkage	Steel
Finish	Standard

OPERATOR
Type, Model, etc. Double acting air cylinder 2" X 10" stroke 90 psi air required, assume operating accessories by others

ACCESSORIES

attach. 176 to ECMS 591SR1

DRAWINGS

3-4 weeks after formal acknowledgment

DELIVERY

12-18 weeks after formal acknowledgment of order (or

COMMENTS

approval print return if applicable)

228 291

P.O. Box, Allentown, PA

NET UNIT PRICE \$2,282.91



MOSSER INDUSTRIES, INCORPORATED

P. O. Box 1246 • Allentown, Pennsylvania 18105
(215) 424-7112

an **EMERSON** subsidiary

LOUVER SPECIFICATION

CUSTOMER BURNS AND ROE

DATE March 1, 1979

INQUIRY/ORDER Pa P & L 3-mile Island, Unit #2

QUOTATION I-9737

SHEET 2 OF 2 BY JCS

Our Attached Quotation is for Construction and Materials Indicated on this form. Any Deviation May Result in Price Revision.

CUSTOMER SPECIFICATIONS

Item	2
Quantity/Location	2
Flue Orientation	
Flow Media	Clean Air Exhaust
Temperature	Normal Maximum 120°F
Flow Volume	Normal 10,000 Maximum
Pressure	Maximum Shut-Off -10"WC
Operation	Throttling On-Off

REVISIONS DATE/BY

2 REQ'D:

TAG # - D5883

TAG # - D5890

DAMPER DESCRIPTION

Size	Width 36" Height 30" F. to F. 15"
Type	Parallel X Opposed
No. Blades/Orientation	Horizontal 2bl X 36" In Vertical
Flange Width	4"
Torque Req'd	745' #
Operating Time	Dependent upon accessories customer
Pressure Drop/Full Open	0.1"WC
Leakage	36 ACFM
Weight	600# net ea. 660# shipping ea

US25

DAMPER MATERIALS

Price

Frame	Carbon Steel
Blade	Carbon Steel flat plate
Shafts/Dia.	450 Stainless Steel 1"
Bearings	Outboard, self-lubed
Packing	Inboard, self-lubed asbestos
Seals	316 Stainless Steel
Linkage	Steel
Finish	Standard
OPERATOR	Double acting air cylinder 4" X 10" stroke
Type, Model, etc.	

attach 2g to ECM S5914 Rev. 1

POOR ORIGINAL

2-4 weeks after formal acknowledgment
14-16 weeks after formal acknowledgment order (or approval print return if applicable)

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F.O.B. Allentown, Pa.
NET UNIT PRICE \$2,170.00

Price Adjustment

The contract price will be subject to adjustment in accordance with the following:

45% of the total selling price shall be considered as cost of labor.

55% of the total selling price shall be considered as cost of material.

A price multiplier will be developed from index figures published monthly by the U.S. Department of Labor, Bureau of Labor Statistics. Material cost adjustments will be based on wholesale price indices under the subtitle "Metals and Metal Products" published in the Monthly Review. Labor cost adjustments will be determined from Table C-4: Average hourly earnings excluding overtime, under the subtitle "Durable Goods" published in Employment and Earnings.

In each case the index for the month during which the proposal was made will be established as the base index. Each final index will be established by adding to the latest published rate an estimated increase for each elapsed month or fraction thereof for which a rate has not been published. The estimated monthly increase shall be calculated as the average monthly increase during the latest three published months.

The price adjustment will be made by application of multiplier developed from the following formula and applied to each element of cost:

$$\frac{\text{Final Index}}{\text{Base Index}} = \text{Multiplier}$$

Adjustments will be made to individual shipments and shall be itemized on each invoice at the time of submittal.

MOSSER INDUSTRIES, INC.
an Ecolaire subsidiary

Attach 376 to Ecm 594721

228 293

POOR ORIGINAL

POOR ORIGINAL

STANDARD TERMS AND CONDITIONS

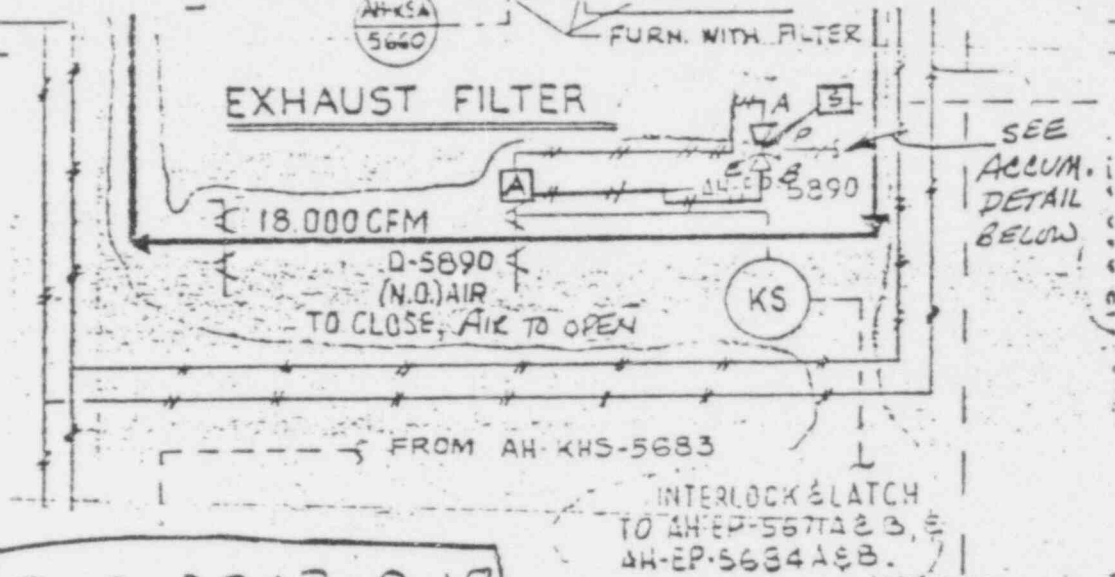
1. The terms as hereafter written shall supersede the terms of the customer's order in the event of contradiction or inconsistency, and no understanding, agreement, term, condition, or trade custom or variance herewith shall be binding on the parties. If the terms and conditions hereof are not acceptable to you, you must advise us at once.
 2. Clerical and stenographic errors are subject to correction.
 3. Claims for damage or shortage must be made in writing within ten days after receipt of goods, with the packing slip attached; but the seller is not responsible for breakage or shortage caused after delivery to common carrier.
 4. No goods are to be returned without our specific authorization for each item. Returns will be subject to restocking and handling charges.
 5. Risk of Loss for damage to the goods passes to the customer upon delivery to the carrier, regardless of who pays the shipping costs.
 6. Orders become contracts only after acceptance by Seller at its home office in Allentown PA.
 7. Seller reserves the right to discontinue the manufacture of or change or modify the design and construction of any product without incurring any obligation.
 8. Seller shall not be held responsible for delays in completion or shipment caused by strikes, differences with workmen, accidents, delays of common carriers, suspension or curtailment of production due to shortage of supplies or raw materials, other contingencies beyond its reasonable control, or acts or omissions of the buyer. All promises of shipment are as closely estimated as possible. Seller uses its best efforts in every case to ship within the time promised, but does not guarantee to do so. If a shipment is ready but is delayed by any of the causes first described above, from the time products are ready for shipment, Seller shall have the right to charge a storage fee at the rate of one per cent per month of the price of the products.
 9. Seller may, during any period of shortage due to any of said causes, prorate its supply of such goods among all its buyers in such a manner as may be deemed equitable in the sole judgment of the Seller.
 10. Seller's failure to complete within the time estimated will not warrant cancellation of the order except upon terms which will indemnify Seller against loss. If buyer requests shipment earlier than the estimated time, overtime and other extra costs incurred by Seller in complying will be added to the price.
 11. Seller warrants its products to be of good materials and workmanship under normal specified use and service, as per valve spec. sheet, for a period of one (1) year from date of shipment. Seller's liability for any such defect shall be limited to repayment of purchase price, repair, or replacement, at Seller's option during such period, upon proof satisfactory to Seller and upon customer's returning such products to Seller's factory, all charges prepaid. Any material, equipment, or part not made by Seller will bear only the same warranty from Seller as the supplier shall give to it. We do not allow claims for unauthorized repairs, labor, or materials.
 "THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED. SELLER EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE"
- Limitation of Liability: The remedies of the Purchaser set forth herein are exclusive, and the total liability of the Company with respect to its contract or the equipment or services furnished hereunder, in connection with the performance or breach thereof, or from the manufacture, sale, delivery, installation, repair, or technical direction covered by or furnished under this contract, whether based on contract, warranty, negligence, indemnity, strict liability or otherwise, shall not exceed the purchase price of the unit of equipment upon which such liability is based. The Company shall in no event be liable to the Purchaser, any successors in interest or any beneficiary or assignee of this contract for any consequential, incidental, indirect, special or punitive damages arising out of this contract or any breach thereof, or any defect in, or failure of, or malfunction of the equipment hereunder, whether based upon lost goodwill, lost profits or revenue, interest, work stoppage, impairment of other goods, loss by reason of shutdown or non-operation, increased expenses of operation of the equipment, loss of use of power system, cost of purchase of replacement power or claims of Purchaser or customers of Purchaser for service interruption whether or not such loss or damage is based on contract, warranty, negligence, indemnity, strict liability, or otherwise.
12. Seller reserves the right to furnish substitutes for materials which cannot be reasonably obtained because of any restrictions voluntarily or compulsorily established by, or in connection with, any governmental authority.
 13. Seller reserves the right to invoice when orders are shipped. Seller also reserves the right to invoice when orders are ready for shipment and are held past the agreed delivery date; by customer's request or any reason beyond Seller's control.
 14. Seller's terms are 1% 10 days/net 30 days. There will be a 1% per month interest charge on accounts not paid 30 days after date of invoice.
 Orders in excess of \$100,000 will be subject to progress payments, as set forth in the proposal.
 15. Unless so indicated, the price does not include any duty import, federal, state, county, or local excise, sales, use, or like taxes which are now, or which may hereafter be levied upon the products, or the sales contemplated hereby and the amount of any such taxes which are or become liable will be added to the price.
 16. In case of default of payment, Seller, his agents or assigns, is authorized to take possession and remove said property from the customer's premises or elsewhere without demand or other cause or notice of any kind, whereby all rights for action of trespass or other causes are waived; and to collect reasonable charges for use of said property. Collection costs, if any, are to be included.
 17. Cancellation of this order, after it has been accepted, can be made only with written approval of Seller.

attach 4076 to ECM 58914R1

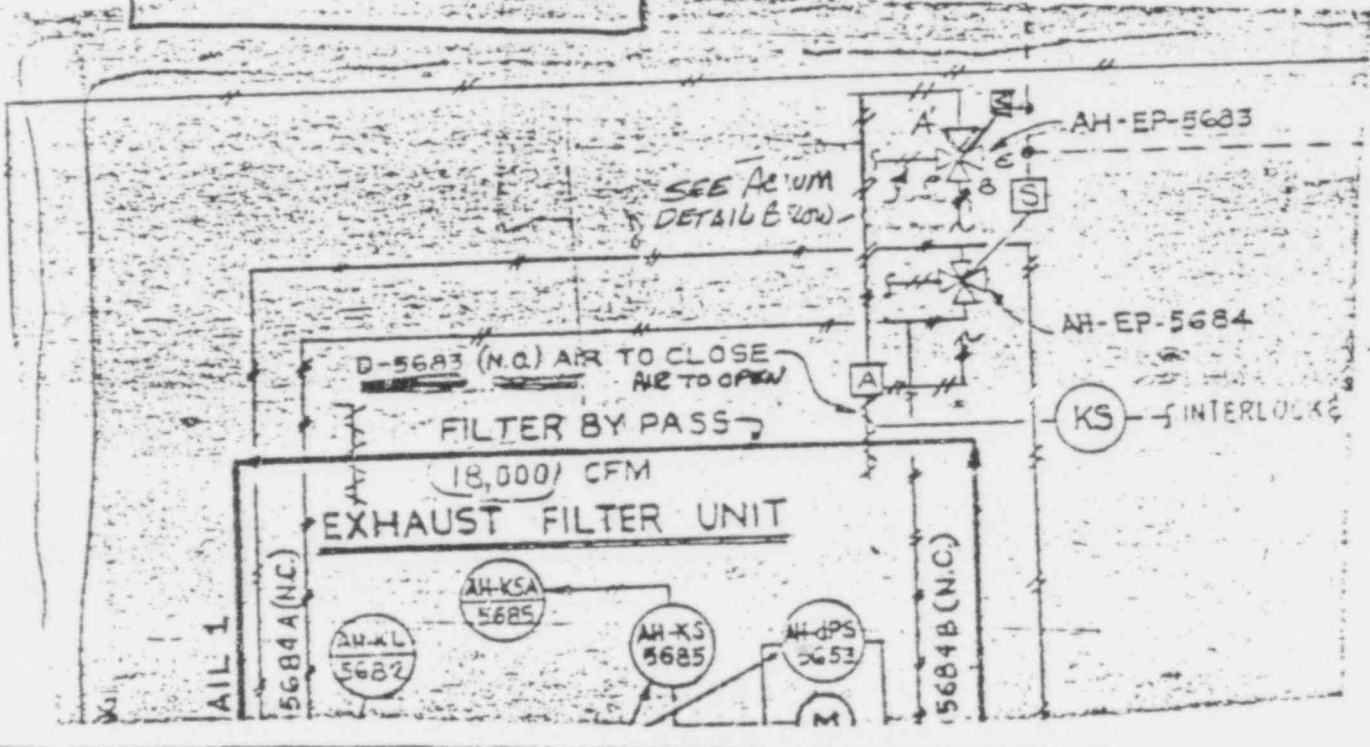
228 294

ATTACH 5896 TO ECM 515K

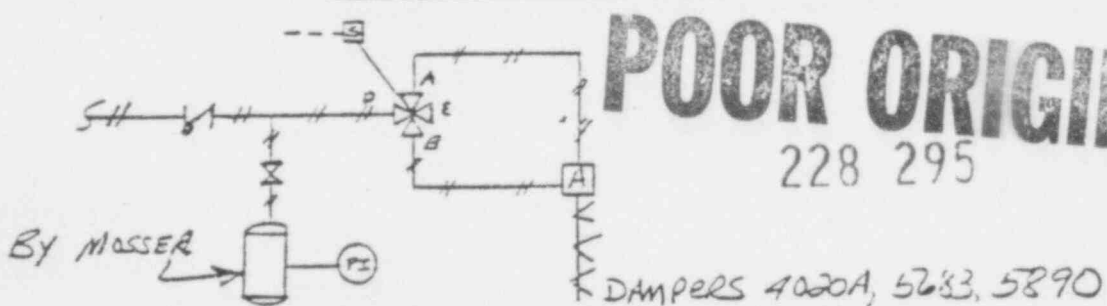
W.O. No. _____ Date _____ Calc. No. AH-KSA 5660 Book No. _____ Page No. _____
Drawing No. _____ Sheet _____ of _____
By _____
Title _____



DWG 2343 R 18



DETAIL FOR ACCUMULATOR



POOR ORIGINAL

228 295

AHEP 5290

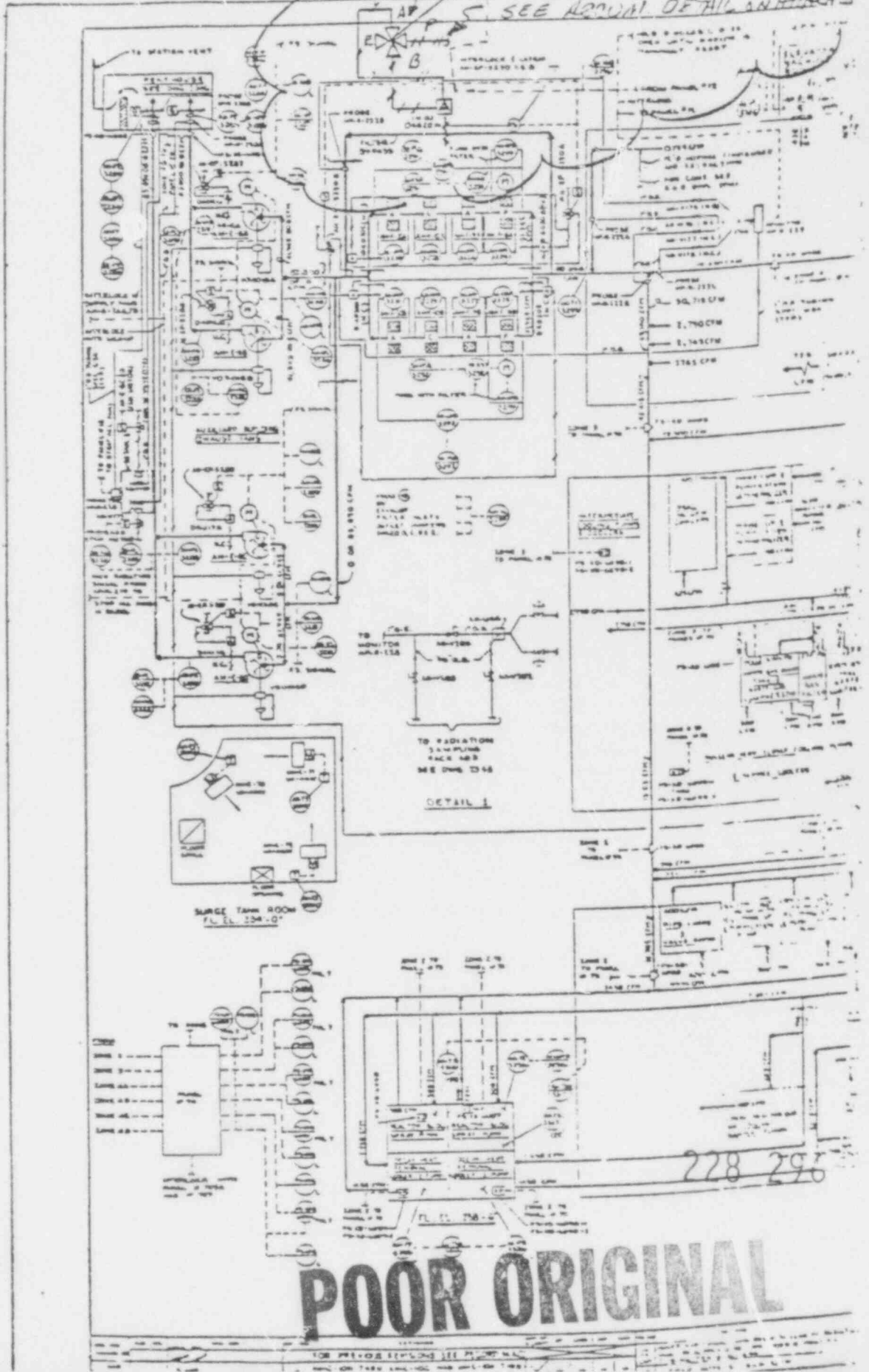
SEE ADJACENT DETAIL ON ATTACH 5

2042
R16

POOR ORIGINAL

ATTACH

6 of 6 to
EEMS 5915R1



228 296

POOR ORIGINAL

POOR ORIGINAL

EXHIBIT A
EM-008

THE NUCLEAR STATION - UNIT #2
BURNS AND ROE NUCLEAR SAFETY REVIEW

ATTACHMENT TO:

FCI#	REV	DATE
FCI#	REV	DATE
FCI#	REV	DATE
FCI#	REV	DATE

The EM-2 plant design change, tests or experiments directed by the engineering document identified above, has been reviewed and found to involve the nuclear safety of the plant as follows:

1. Does it make a change to conditions as now described in PSAR? NO
YES

If "NO", delete #2, 3 and 4 and complete #5.
If "YES", proceed to #2.

2. Does it involve a system, component or procedure that is Nuclear Safety Related? NO
YES

If "NO", delete #3 and 4 and complete #5.
If "YES", proceed to #3.

3. Does it result in a change to:

(A) Design Criteria?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
(B) Engineering Specifications?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
(C) Codes or Standards?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
(D) PSAR?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>

If all four are "NO", delete #4 and complete #5.
If any are "YES", provide brief of each in #4.

4. Brief statement of extent of change and its effect on existing probability, consequences and margin of safety (or creation of new safety or accident conditions) compared to PSAR. If necessary continue remarks on additional sheets and attach them to this form.

THIS CHANGE INCREASES THE MARGIN OF SAFETY BECAUSE IT DECREASES THE LEAKAGE IN THE EXHAUST FILTER BY-PASS DAMPERS TO .111% IN AUX BLDG & .311% IN THE F.H. BLDG. CHANGE TO FIGURE 9.4-4 & 9.4-3.

5. It is found that it does not adversely affect nuclear safety, therefore it is not an "Unreviewed Safety Question" (per 10 CFR 50.57).

228 297

[Signature]
Reviewed
(Cognizant Engineer)

[Signature]
Approved
(Project Engineer)

[Signature]
Date

If the statement of #5 is not true, do not sign this form. Return the entire package to Project Engineer who will convene design review conference with project personnel needed to complete further action.

Distribution: Per PCI/FCI/ECI/EBR requirements and
R.A. Klingman, Mac-Ed, Reading, PA

POOR ORIGINAL