Brookhaven National Laboratory
Plant Engineering - E&CS Division
Engineering Change Notice Form

PROJECT: CCWF II **JOB No.** 11705

ECN Title: Steam and Condensate Piping **ECN No.** 20

Affected Documents: Drawings MP-100, MP-304, MP-305, MH-600

Requested Change (Attach sketch if applicable): Modify steam and condensate routing to reduce congestion in the pipe tunnel.

Requested by: A. Raphael Date: 1/5/10

Resolution: Modify piping per attached marked up copy of MH-600. Add condensate flash tank to capture HPC returns- Armstrong R4 (24" diameter) or approved equal as shown on drawing.

Approvals:
A/E or Proj. Eng.: Date: 1/15/10
Project Coordinator: Date: 1/15/10
Manager: Date:

Contractor shall take the following action:

☐ Await change order from P&PM

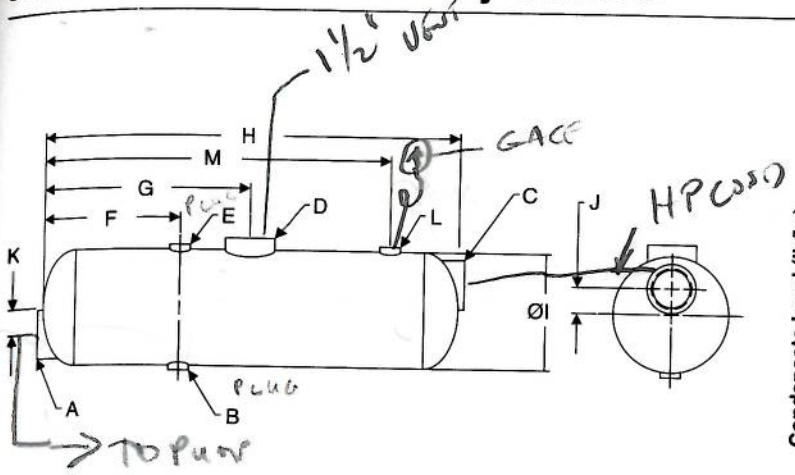
X Proceed with change as described

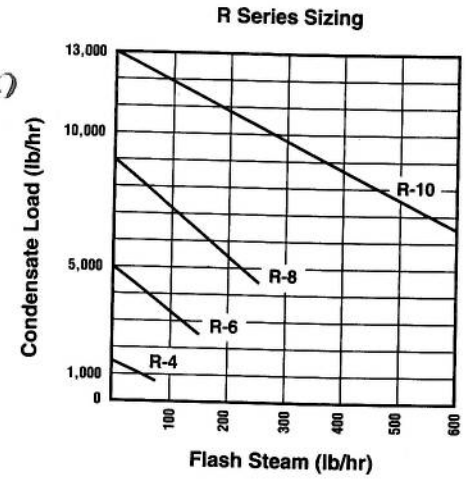
X Provide cost proposal for change as described

Distribution:

E. W. Howell	Giffels	PPM
E&U	MPO	
O&M	DOE	
NSLS II	ECN File	

Horizontal Flash Recovery Vessels





Features

- ASME coded and stamped vessels
- Standard pressure rating 150 psi (other pressure ratings available upon request)
- Standard models are designed and sized to cover a wide range of applications and loads
- Flash vessels are designed to provide low velocity flash steam with no water carryover
- Quick payback for flash recovery investment
- **Special tanks available upon request**
- R-Series horizontal flash tanks for low flash load applications.

For a fully detailed certified drawing, refer to CDF #1038.

Flash Steam Savings Analysis

Part I: Determining the amount of flash steam produced

A. Condensate Load — A = _____ lb/hr.

B. Annual hours of operation — B = _____ hrs/yr.

C. Steam Cost — C = _____ $/1,000 lbs.

D. Flash steam percentage from chart (on page CRE-41) — D = _____ %

E. Flash steam produced:

D x A = flash steam produced — E = _____ lb/hr.

Part II: Determining dollar value of the flash steam

F. Annual flash steam savings:

$$F = \frac{E \times B \times C}{1{,}000}$$

F = _____ $/yr.

NOTES
1. Models are ASME SEC. VIII "U" stamped for 150 psig
2. All connections are FNPT.

Physical Data—Standard Design Model AFT

Model No.	R-10		R-8		R-6		R-4	
	in	mm	in	mm	in	mm	in	mm
A	3	76	2	50	1-1/2	38	1-1/2	38
B	1	25	1	25	1	25	1	25
C	3	76	2	50	1-1/2	38	1-1/2	38
D	3	76	2-1/2	64	2	50	1-1/2	38
E	1	25	1	25	1	25	1	25
F	12	305	12	305	12	305	8	203
G	18	457	18	457	18	457	12	305
H	36	914	36	914	36	914	24	610
I	10	254	8	203	6	152	4	102
J	2-1/4	57	1-3/4	44	1-1/4	32	1	25
K	2-1/4	57	1-3/4	44	1-1/4	32	1	25
L	1	25	1	25	1	25	1	25
M	30	762	30	762	30	762	18	457

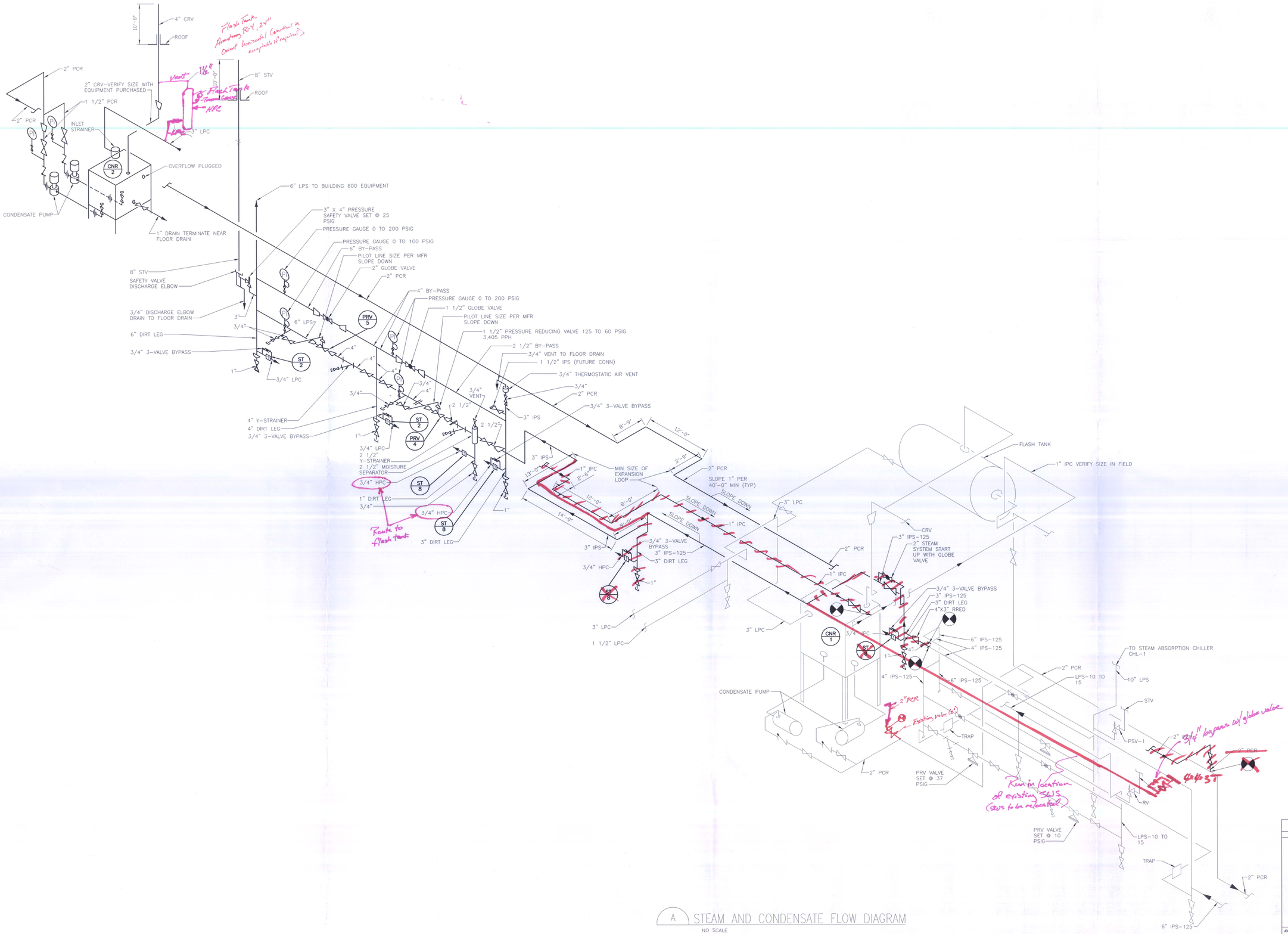
NOTE: All flash tanks are ASME coded for 150 psig (10 bar). Special sizes and connections available upon request.

Capacities—Standard Design Model AFT

Model No.	Maximum Condensate Load	
	lb/hr	kg/hr
R-10	13,000	5,897
R-8	9,000	4,082
R-6	5,000	2,268
R-4	1,500	680

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Date (mmm dd yyyy)	Issued For	Rev.
12-07-2007	TITLE II DESIGN 30% REVIEW SUBMITTAL	C
03-28-2008	TITLE II DESIGN 60% REVIEW SUBMITTAL	D
07-31-2008	TITLE II DESIGN 90% REVIEW SUBMITTAL	E
08-25-2008	TITLE II DESIGN 100% OWNER REVIEW	F
02-19-2009	TITLE II CONSTRUCTION BID ISSUE	0



A STEAM AND CONDENSATE FLOW DIAGRAM

NO SCALE

LEGEND

EXISTING

NEW

JOB NO.	SHEET NO.	REVISION	DATE	DWN.	APP'D.	OA
		A				

BROOKHAVEN NATIONAL LABORATORY

UNDER CONTRACT WITH
UNITED STATES DEPARTMENT OF ENERGY
PLANT ENGINEERING DIVISION
UPTON, NEW YORK 11973

JOB TITLE: CENTRAL CHILLED WATER FACILITY PHASE II	DWG. TITLE: STEAM AND COND FLOW DIAGRAM
IJR,GPP,JNL, HEM	DATE: - -
ACCT. NO.	SHEET OF
SCALE: AS NOTED	DWN. BY: EP; REV'D BY: BN
JOB NO.: 11705	DWG. NO.: MH-600
ESHQ RISK LEVEL	APP'D. BY: W HARRISON
BLDG. NO.: 600	
PATH:	

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Project Manager: G. KAPLAN
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Project No.: SF070003