

Greensberg

METROPOLITAN EDISON COMPANY Subsidiary of General Public Utilities Corporation

FOR INFO ONLY

Subject UNIT II BWST TRANSFER TO UNIT I

Location TMI NUCLEAR STATION
MIDDLETOWN, PA 17057

To G. P. MILLER

Date DECEMBER 11, 1979

INFORMAL
SUBMITTAL

In order to provide adequate near term reserve capacity in Unit II for the storage of Epicor II effluent, we are evaluating the possibility of transferring approximately 350,000 gallons from the Unit II BWST over to Unit I. Replacement of this water quantity with processed water into the Unit II BWST is critically important to our continued ability to process intermediate level waste water, and to initiate cleanup of the Unit II RCS by feed and bleed. This memo is to formally apprise you of the current plans for this evolution and to request your cooperation in ensuring an expeditious completion of the transfer, as the effect on Unit II waste water processing is considerable.

1. Transfer Quantity

We are currently discussing with NRC a Tech Spec change to permit a minimum Unit II BWST inventory of 100,000 gallons. Based upon approval of this minimum, and a current BWST inventory of about 460,000 gallons, Unit I would be requested to accept ~350,000 gallons from the Unit II BWST.

2. Unit I Water Disposition

A suggested disposal method within Unit I for this quantity of water could be to:

- a) Transfer ~170,000 gallons from Unit II for processing thru Epicor I, and ultimate disposition to the river.
- b) Transfer ~180,000 gallons from Unit II into the Unit I BWST after cleanup to remove unacceptable sodium levels, (see Item 4).

While other disposal options are possible, and have been discussed with representatives of both units, it was concluded that this method would have a lesser overall impact on Unit I. This is particularly true in the area of chemical cleanup. Prior to initiating Unit II BWST cleanup thru Epicor I however, NRC concurrence must be obtained. We are currently discussing this item with John Collins.

3. BWST Chemistry

A copy of current (11/26/79) Unit BWST chemistry and radiochemistry is attached for your information. This analysis has already been discussed at length between Ed Fuhrer and Earl Showalter to determine the best approach to any required cleanup. This

8211180454 791211
PDR ADOCK 05000289
P PDR

review concluded that the water should be passed through the Unit I Precoat Filter (WDL-F-1 A/B) and Cation Demineralizer (WDL-K-2 A/B) after passing through the Unit II Spent Fuel Filter (SF-F-1 A/B). This cleanup path is required principally to remove the excessive sodium (42 ppm) present in Unit II BWST water. Calculations by Ken Frederick indicate that two (2) complete fresh batches of a special cation resin mix are required to effect the necessary chemical cleanup. Due to the limited spent resin storage capacity in Unit I (due to storage of pre-accident spent resins), a method must be implemented to transfer the equivalent of ~105 ft.³ of spent resin from Unit I to make room for the resin which will be expended during this evolution. Three (3) options have been discussed for this problem. They are, in order of priority:

- a) Ship the Unit I pre-accident resin in a dewatered state (requires NRC approval).
- b) Transfer the spent resin to three (3) Hittman casks and temporarily store in the south staging area pending solidification and shipment in early 1980.
- c) Transfer to one (1) Cap-Gun 6 x 6 cask for indefinite storage in the south staging area.

All three of these options are being pursued simultaneously to ensure that a method is available when the resin transfer is necessary.

4. Flow Path

Unit II Borated Water Recirc Pump (SF-P-2) will draw from the Unit II BWST and discharge into the Unit II Cask Pit fill line after passing through a Spent Fuel Filter (SF-F-1 A/B). A fitting is being added to the bottom of the Cask Pit fill line for connection to a temporary hose which will span the Fuel Handling Building to the Unit I Cask Pit. Appropriate connections will be included for DW water flush and air blow down of this temporary line. Unit I Borated Water Recirc Pump (SF-P-2) will draw from the Cask Pit, and discharge through a Precoat Filter and Cation Demineralizer into the Unit I BWST.

The flow path for discharge thru Epicor I will be from the Unit II BWST directly into the Unit II cask pit. This water can be pumped to the Unit I Aux. Bldg. sump for processing through EPICOR I. A procedure for this process path has already been approved.

5. Procedure

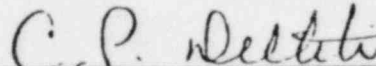
We are preparing a procedure to cover transfer operation in

both Units I and II, for review and approval by both PORCs, the RORC, and NRC. The procedure should be available early the week of 12/10/79.

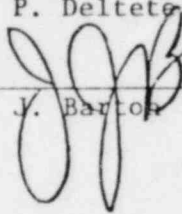
6. Schedule

Preparation efforts for this evolution are geared to initiate the transfer before the end of the year.

Your cooperation in reviewing this proposal and providing any concerns or comments by 12/14/79 would be greatly appreciated. If you have any questions, please call me.



C. P. Deltete

Approved: 
J. J. Barton

CPD/skb

Attachment

cc: J. J. Chwastyk
N. Dye
B. D. Elam
K. H. Frederick
E. C. Fuhrer
G. A. Kunder
W. J. Marshall
R. McGoey
M. J. Ross
E. D. Showalter
R. Wilson

Inter-Office Memorandum

GPU Service

Date November 28, 1979

Subject Unit 2 BWST Sample Analysis

To E. Fuhrer
E. Showalter

LOCATION TMI/WMA TMI-II-R-2936

Attached, please find a copy of the analysis report for the Unit 2 BWST Sample, consisting of both chemical and radiochemistry analysis. These results should be used to assess the need for cleanup prior to transferring water over to the Unit 1 BWST.

C. P. Deltete
C. P. Deltete

CPD/jcp

cc: J. Chwastyk
B. Elam
W. Marshall
M. Ross

PAUL
DELTETE

25569
11/25
2000

GAMMA ANALYSIS SUMMARY SHEET

ME No. 1 _____ No. 2 B&W _____ SAI _____ RMC _____ NRC _____ Other _____

Title 1/2 BUST Sample No. 25569

Time/Date Sample 1205 11/26/79 Time/Date Analysis 1833 11/26/79

Geometry 1 liter bottle Counting Time 1000 Sec.

Volume 1000ml Analyst J. Path

Air _____ (1) Liquid (2) Other _____

- Report MDA's for I-131 on charcoal cartridges and for Cs-134, Cs-137, Co-58 and Co-60 on particulate filters for those isotopes which are not detected in sample.
- Report MDA's for I-131, Cs-134, Cs-137, Co-58 and Co-60 for those isotopes which are not detected in sample.

Isotope	Concentration	LLD	Uncertainty
Mn 54	5.927 E-6		1.037 E-6
Co 58	6.534 E-4		7.956 E-5
Co 60	4.155 E-5		5.164 E-6
Cs 134	5.066 E-4		6.644 E-5
Cs 137	8.913 E-4		1.025 E-4
Ru 106	8.565 E-4	(511.80 KeV)	
I 131		3.936 E-6	

GROSS BETA-GAMMA DATA SHEET

11/26
2009

Sample # 25570 Date 11/26/79 Time _____
 Sample ID U/2 BWST
 Count Time 1847 Date 11/26/79 Tech J. G. Patton
 Counter # 4 Bkg 34 Eff .50

Beta-Gamma Activity

Gross Counts 4294
 Counting Time 1 min.
 Net CPM 4260 cpm
 Sample Volume 2 mls(cc)

$\frac{\text{NET CPM}}{\text{Eff.} \times \text{Vol.} \times 2.22E6} = \text{uci/ml}$

Standard Deviation

$$\sigma = \left(\frac{\text{Gross CPM}}{\text{Count Time}} + \frac{\text{Bkg CPM}}{\text{Bkg Count Time}} \right)^{1/2}$$

2 σ = Standard Deviation

LLD

LLD based on 4.66σ , for this counter with above background.

$$\text{LLD} = 4.66 \left(\frac{\text{Bkg CPM}}{\text{Bkg Count Time}} \right)^{1/2}$$

Expressed in uci/ml for this sample

$$\text{LLD} = \frac{4.66 \sigma}{\text{Eff.} \times \text{Vol.} \times 2.22E6} \text{ uci/ml}$$

REPORT

β Activity = $1.6E-3 \text{ uci/ml}$ + $4.94E-5 \text{ uci/ml}$ at 20
 or

< LLD = _____

2

SAMPLE REQUEST TAG

To be completed by Sample Coordinator

Priority: 1 Date: 11/21 Sample No.: 25570

Time: 0900 Results Date: _____

Sample ID: Unit No. u-2 BU2T

Requestor: Paul Deltete Ext. No. _____

Scan Sample Met-Ed No. 1 _____ No. 2 _____ B&W X

SAI _____ RMC _____

NRC _____ EG&G _____ Other: _____

To be completed by Sample Collector

Name of Collector: _____ Date: _____

Liquid Volume: 250 ml Air Volume: _____ Time On: _____

Other: _____ Flow Rate: _____ Time Off: _____

Analysis Requested: γ Scan _____ PH _____ Cond. _____ B _____

2 ml ← Gross β + H³

Signature: H³ = 1.44E-2 uci/mL

To be completed by Lab

Scan/Chem Completed: Date/Time: _____

Counter's Signature: _____

Chem Results: _____

Please Phone Results to Sample Coordinator

Copy Description - White - Sample Coord.

Canary - With Sample

Pink - Pending

SAMPLE REQUEST TAG

25571
11/26
2215

To be completed
by Sample
Coordinator

Priority: 1 Date: 11/21 Sample No.: 25571

Time: 0900 Results Date: _____

Sample ID: _____ Unit No. u-2 BWST

Requestor: Paul Deltete Ext. No. _____

Scan Sample Met-Ed No. 1 _____ No. 2 X B&W _____

SAI _____ RMC _____

NRC _____ EG&G _____ Other: _____

To be completed
by Sample
Collector

Name of Collector: _____ Date: _____

Liquid Volume: _____ Air Volume: _____ Time On: _____

Other: _____ Flow Rate: _____ Time Off: _____

Analysis Requested: Scan PH Cond. B 14

Chlorides, Fluorides, Sodium, Sus. Solids, Total Solids

Signature: _____

To be completed
by Lab

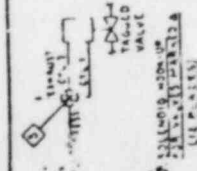
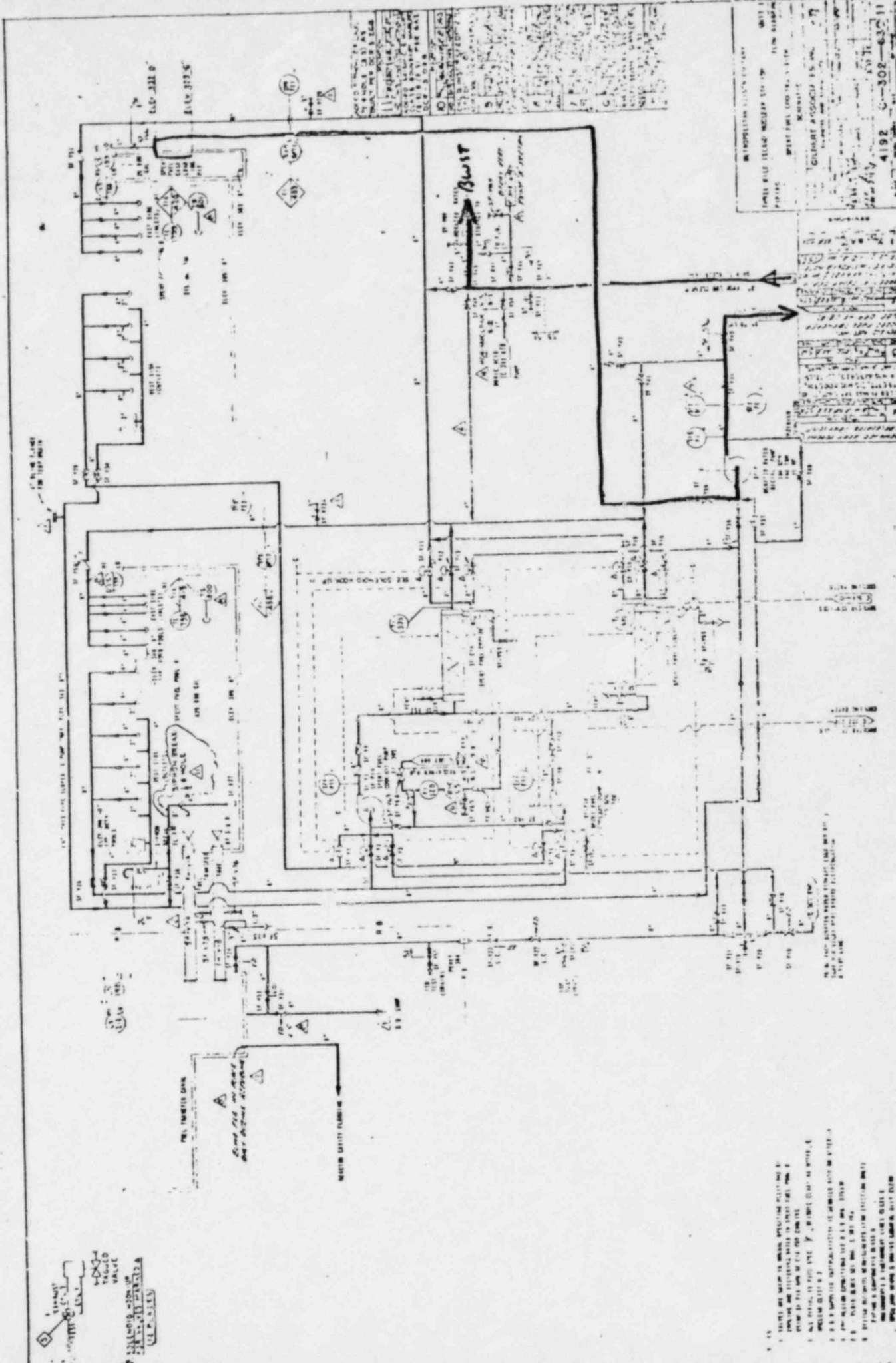
Scan/Chem Completed: Date/Time: 11/26/79 2140

Counter's Signature: _____

Chem Results: PH 6.0, COND 96 umho's, B 3509 ppm, CL⁻ .22, F⁻ .052 ppm, NAT 71.6 ppm, SUSP. SOL. 0.9 ppm

Please Phone Results to Sample Coordinator

- Copy Description - White - Sample Coord.
- Canary - With Sample
- Pink - Pending



1. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
2. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
3. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
4. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
5. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
6. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
7. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
8. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
9. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.
10. ALL PIPING IS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO PLUMBING CODE.

METROPOLITAN PLUMBING CO. INC.
 1100 N. LAKE ST. CHICAGO, ILL.
 4192 C-302-63011

--- of ten to Sygas Demin

