Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

August 3, 1984

J. G. Keppler
Regional Administrator
U. S. Nuclear Regulatory Commission
799 Roosevelt Road, Building 4
Glen Ellyn, IL 60137

SUBJECT: (1) Open Item 50-454/83-14-02;50-455/83-12-02
(2) Open Item 50-454/83-46-02;50-455/83-34-02

Attached is information which should document completed action with regard to the above referenced open items. In the interest of time, the Station is sending this information directly to you with the hope that this will expedite closure on these items.

The first attachment represents a revised page for Teledyne's Analytical Procedures Manual.

The second attachment represents Teledyne sample collection data sheets indicating BY-22 has been installed and is operational.

If you have questions regarding this letter, please contact me at Byron Station.

K T Weaver

K. T. Weaver
Station Health Physicist
Byron Nuclear Station

Attachments

cc: D. L. Farrar, CECo Nuclear Licensing
M. J. Oestmann, NRC Region III

I certify that is an exact duplicate of the original document. Mary Foster RIII

Rev. 4, 6-01-84
Approved by: L.G. Huebner

3.2 Airborne Iodine Gamma Spectroscopic Analysis by Germanium Detector

NOTE: Because of the short half-life of I-131, count the samples as soon as possible after receipt and no later than 48 hours.

1. Load the charcoal cartridges in a specially designed holder or transfer charcoal from each cartridge to individual plastic bags. Seal the bags.

2. Label each bag with corresponding project ID, locations ID, and date of collection.

3. Place the bags in a standard geometry container, cap the container and secure the cap with a tape.

4. Place the holder or container on the detector and count for a period of time that will meet the required Lower Limit of Detection (LLD).

Calculation:

$$A_1 = \text{I-131 activity (pCi/sample)} = \frac{A}{2.22 \times B} \quad \text{(at counting time)} \qquad (1)$$

Where:

A= net count rate of I-131 in the 0.36 MeV peak (cpm)
B= efficiency for the I-131 in 0.36 MeV peak (cpm/dpm)

Correction for Equilibrium (assuming constant concentration over the sampling period) and Decay:

$$C = \frac{\lambda A_1 e^{\lambda t_1}}{F\,(1-e^{-\lambda t_2})} \qquad (2)$$

Where:

C = equilibrium concentration of I-131 (pCi/m^3)

A_1= activity of I-131 at the time of counting (pCi/sample)

e= the base of the natural logarithm = 2.71828

λ= 0.693/half life (days)=0.693/8.04 = 0.0862/day

t_1= elapsed time between the end of sampling and mid-counting point (in days)

t_2= duration of collection (in days)

F= m^3/day

TELEDYNE ISOTOPES

[illegible]

RAD/CHEM FILE LOCATION 2.12.1724

SAMPLE COLLECTION DATA SHEET

Facility Byr[illegible] Collection Date [illegible]-9-84 Collector Phil Coulter

TIME	LOCATION	TYPE	METER	FL_i	FL_f	G_v	G_r	V_{max}	REMARKS
1715	BY-01	APAI	171.9	1.0	1.0	NA	NA	23	
1055	02		170.2	1	1.0			24	
1825	03		178.6	1.0	1.0			25	
1805	04		172.9	1.0	1.0			23	
1500	05		175.7	1.0	1.0			26	
1420	06		171.3	1.0	1.0			25	
1310	07		170.4	1.0	1.0			23	Good! [illegible]
1215	08		169.9	1.0	1.0			26	
1515	21		170.3	1.0	1.0			24	Electric connection complete. started pump
1510	22								
1620	23		170.5	1.0	1.0			24	
1635	24		171.0	1.0	1.0			24	
1720	BY-09	SW	[illegible]						
W 1415 E 1415	12	SW-1-							[illegible]
[illegible]05	13	SW							

NOTES: [illegible] 0700 [illegible] 2015 [illegible]
[illegible]
Actual [illegible] S.
WX! Sct [illegible] warm [illegible]

SAMPLES SCHEDULED BUT NOT COLLECTED

LOCATION	TYPE	REASON	WEEK MISSED

ABS 7/20/84

All scheduled samples collected PRC (initial)

2.12.17 24

TELEDYNE ISOTOPES
MIDWEST LABORATORY
1509 FRONTAGE ROAD • NORTHBROOK, IL 60062-4197

KMW 7/31/84

SAMPLE COLLECTION DATA SHEET

Facility Byron Collection Date 7-23-84 Collector Phil Coulter

TIME	LOCATION	TYPE	METER	PL_f	PL_i	G_v	G_r	V_{max}	REMARKS
1035	BY-01	APAI	165.3	[illegible]	1.0	NA	NA	24	
1155	02	|	165.4	1.[illegible]	1.0	|	|	26	
0825	03	|	160.5	1.0	1.0	|	|	25	
0840	04	|	168.1	1.0	1.0	|	|	22	
0900	05	|	167.1	1.1	1.0	|	|	26	
0915	06	|	166.5	1.0	1.0	|	|	25	
0955	07	|	166.8	1.0	1.0	|	|	23	
1010	08	|	165.8	1.0	1.0	|	|	26	
1120	21	|	165.3	1.0	1.0	|	|	24	
1010	22	|	165.2	1.0	1.0	|	|	23	
1105	23	|	165.2	1.0	1.0	|	|	24	
1055	24	|	165.1	1.0	1.0	|	|	24	
1045	BY-09	SW	1Gal						
E 0910 N 1120	12	|	|						
0935	13	⊥	⊥						

NOTES: Time cut 0650 IN 1345 [illegible] cut 4 IN 631 [illegible] BY 01-08 & 21-24 [illegible] Completed Annual servicing on 8/01 and 01 Pumps.
WX: Hi Thin ovcst. HAZY- HOT - windy

SAMPLES SCHEDULED BUT NOT COLLECTED

LOCATION	TYPE	REASON	WEEK MISSED

ABS 7/31/84

All scheduled samples collected AB C (initial)

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