



IntegrYS Energy Group, Inc.

130 East Randolph Drive  
Chicago, IL 60601

www.integrysgroup.com

March 24, 2008

Verneta J. Simon, P.E.  
United States Environmental Protection Agency  
Emergency Response Branch  
77 West Jackson Blvd.  
Chicago, Illinois 60604

EPA Region 5 Records Ctr.



314714

RE: 184 North Harbor

Dear Verneta,

Enclosed is one (1) copy of the radiation monitoring report prepared by Burns & McDonnell and TN&A Associates for our project at 184 North Harbor. This report is consistent with the requirements of City of Chicago Department of Environment Form No. DOE.ROW.01.

As requested, we will copy you on future reports we send to the Chicago Department of Environment.

If you have any questions, please feel free to contact me at (312) 240-4569.

Sincerely,

A handwritten signature in black ink, appearing to read "Naren Prasad".

Naren M. Prasad, P.E., MPH, LEED AP  
Senior Environmental Engineer

Enclosure



March 13, 2008

Peoples Gas – Streeterville  
File C3

Naren Prasad  
The Peoples Gas Light and Coke Company  
130 East Randolph Drive, 22nd Floor  
Chicago, Illinois 60601

Re: Gas Main Installation at 184 North Harbor Drive

Dear Mr. Prasad:

Pursuant to conditions specified in the excavation permit with the City of Chicago, radiation monitoring was performed at the above referenced site. Burns & McDonnell contracted with TN & Associates, Inc. (TN&A) to conduct the radiation monitoring during the excavation activities for a new gas main installation. These activities occurred on February 26 and 27, 2008.

The instrument used by TN&A to conduct the radiological survey was a Ludlum 2221 scaler/ratemeter with a Ludlum 44-10 probe. The 44-10 probe is a 2"x 2" Sodium Iodide (NaI) probe which is recommended by US Environmental Protection Agency (US EPA) to measure the total gamma and beta radiation contamination or radioactivity. The instrument used during the survey was calibrated on August 22, 2007 by Durateck Instrument Services with a known source and had a calibrated conversion factor of 1 micro Roentgen per hour ( $\mu\text{R/hr}$ ) for every 921 cpm.

Before activities began, TN&A conducted a background survey of the area along Harbor Drive on February 26, 2008. This survey produced readings no greater than  $7.9 \mu\text{R/hr}$ . Excavation activities occurred over two days. Readings taken from excavated material did not exceed  $12.7 \mu\text{R/hr}$ . After excavation, the open trench was scanned with readings ranging no greater than  $14.5 \mu\text{R/hr}$ . Further details on the excavation activities are presented in the attached report.

All of the survey readings collected during the excavation activities were below two times the maximum background reading of  $15.8 \mu\text{R/hr}$ . Further details are presented in the TN&A report which is attached to this letter.

We appreciate the opportunity to continue to be of service to you. If you have any questions regarding this report, please call me at (630) 724-3282.

Sincerely,

Margaret Kelley, P.E.  
Senior Project Manager

Attachment

Cc: L. Milner, BMCD  
R. Bourn, BMCD

March 10, 2008

Ms Margaret Kelley  
Burns and McDonnell  
1431 Opus Place Suite 400  
Downers Grove, IL 60515

Re: Peoples Energy Excavation on 184 North Harbor Drive  
Permit Number:

Dear Ms Kelley

T N & Associates, Inc. (TN&A) was subcontracted by Burns and McDonnell, Inc. to conduct environmental health and safety monitoring of the excavation conducted by Peoples Energy contractor Contracting and Materials Corporation (C&MC) at 184 North Harbor Drive, in the Streeterville neighborhood of Chicago, Illinois . The proposed work by Peoples Energy or their contractor was to excavate an area to allow for gas line installation. The estimated excavation volume was approximately 100 cubic feet,

The instrument used by TN&A to conduct the radiological survey was a Ludlum 2221 scaler/ratemeter with a Ludlum 44-10 probe. The 44-10 probe is a 2"x 2" Sodium Iodide (NaI) probe which is recommended by US Environmental Protection Agency (US EPA) to measure the total alpha, beta, and gamma radiation contamination or radioactivity. The instrument reads in counts per minute (cpm) which can be converted into units of disintegrations per minute (dpm). Natural and man-made radiation contamination is based on unstable atoms continuously going through decaying processes to become stable. The amount of decay or disintegration released can be measured in counts per minute from the instrument and the simple conversion is 1 cpm  $\approx$  10 dpm.

The instrument has an open window that reads all the measurable alpha, beta, and gamma radiation. The manufacturers recommended conversion standard for exposure from cpm to micro Roentgen per hour ( $\mu$ R/hr) 1  $\mu$ R/hr for every 900 cpm. The instrument used during the survey, Ludlum 2221 and Ludlum 44-10, serial number 084458 was calibrated on August 22, 2007 by Durateck Instrument Services with a known source and had a calibrated conversion factor of 1  $\mu$ R/hr for every 921 cpm.

According to the Nuclear Regulatory Commission (NRC), personal radiation exposure should not exceed the non radiation worker limit of 100 milli roentgen equivalent man (mrem). Rem is the unit of human exposure and is a dose rate equivalent to roentgens with a correction factor. For beta and gamma/x-ray, the correction factor is one and for alpha emitters inside the body, the correction factor is 20. Based on personnel exposure for non-radiation workers for an 8-hr day, the level is approximately 35  $\mu$ rem/hr or for naturally occurring for 365 day/24 hours per day the

level is estimated at 0.85 mrem/day which is 35 $\mu$ R/hr to 50  $\mu$ R/hr based on exposure ranging from 250 to 350 mR per year should not be exceeded. Based on the previous activities and background information, Burns and McDonnell request that the proper notification to the US EPA be conducted if at anytime there is an unknown ascendance of twice background during the survey. TN&A follow the requested survey procedure generated by US EPA fact sheet called "Before you Dig – Radioactive Thorium and Construction Activities in the Streeter Area". The US EPA, Region V Representative, Verneta Simon requested notification of any unknown ascendances during the survey.

#### Background Survey

On February 26, 2008, TN&A conducted radiation background survey of the surrounding area prior to excavation. The initial weather conditions during the survey were slight flurries with temperature of 30°F. TN&A surveyed the sidewalk and street around the area to collect the background readings at contact and at three feet above the ground. The highest background reading was 7,300 cpm (7.9  $\mu$ R/hr) at contact with the sidewalk near the area to be excavated. The highest reading within the planned excavation was 7,000 cpm (7.6  $\mu$ R/hr) at contact. The survey levels were similar 3 feet above the initial contact survey.

#### Excavation

On February 26, 2008, Peoples Energy contractor C&MC initially broke up the marked asphalt and concrete area using a backhoe, with a jackhammer attachment. TN&A conducted a survey at contact of the broken concrete and asphalt. The levels at contact 9,680 cpm (10.5  $\mu$ R/hr). The debris was then placed in the dump truck for disposal. Once the material was removed, TN&A conducted another radiological survey of the area where the asphalt and concrete was removed. The highest reading was 11,684 cpm (12.7  $\mu$ R/hr). Once the survey was completed, C&MC placed steel plates over the area.

On February 27, 2008, C&MC removed the steel plates and continued the excavation using one backhoe, with a 0.25 cubic yard bucket to excavate the material, TN&A surveyed the material being removed from the excavation, excluding the initial asphalt material. Once the material was surveyed, it was placed into dump trucks. The excavated material was surveyed and the radiation readings maximum reading of the excavated material was 11,056 cpm (12.3  $\mu$ R/hr).

TN&A also surveyed the walls and bottom of the excavated area which was approximately 4 to 6 feet in depth. The readings were also based on highest levels detected during the survey, which was 13,349 cpm (14.5  $\mu$ R/hr) at contact.

All the survey readings collected during Peoples Energy's excavation were below the two times background results. The background in the area of the excavation was 7,300 cpm or 7.9  $\mu$ R/hr which the action level was set at 14,600 cpm or 15.8  $\mu$ R/hr (twice background) using the Ludlum 2221 scaler/ratemeter and the Ludlum 44-10 probe.

If there are any questions, please contact Ron Bugg by phone at (312) 220-7000 or through an e-mail at [rbugg@tnainc.com](mailto:rbugg@tnainc.com).

Sincerely,



Ronald W. Bugg  
Senior Industrial Hygienist

CC: Naren Prasad, Peoples Energy  
Margaret Kelley, Burns & McDonnell  
Rebecca Bourn, Burns and McDonnell.



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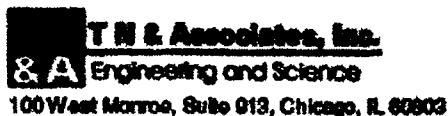
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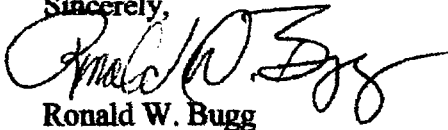
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