October 12, 2021

Joseph Ferguson
Inspector General
Office of Inspector General
740 N. Sedgwick Street, Suite 200
Chicago, IL 60654

RE: Roseland Pumping Station - OIG # 21-0851

Dear Inspector General Ferguson:

The City of Chicago, Department of Water Management (DWM) is in receipt of the Office of Inspector General's (OIG) October 5, 2021 report regarding two May 2021 low water pressure events at the Roseland Pumping Station (RLPS).

As you know, the safety of Chicago's potable water supply is DWM's highest priority. DWM takes any and all low water pressure events extremely seriously and investigates them thoroughly. DWM coordinates with the Illinois EPA on each one. To that end, we have always had on-call staff 24/7 to sample water in the distribution system each time pressure drops below the industry standard of 20 psi, no matter the time of day. DWM also proactively switches to back up generators during situations where power disruptions are expected to occur, such as during large storms.

I. May 2021 Roseland Pumping Station Power Outages

The water pressure drops at the RLPS on May 6, 2021 and May 25, 2021 were complicated engineering events.

Based on the available documents and records, an electrical power voltage sag and a simultaneous phase imbalance on all four lines caused the main pumps at RLPS to go offline. In other words, the loss of electrical power to all four lines caused the circuit breakers at RLPS to open, which required the electrician to reset them. This happened three times on May 6, 2021 and again on May 25, 2021. This is based on logs of breakers opening and closing within the ComEd RLPS vault. Further, third party contractors who were working onsite provided a statement that the lights went out. In addition, during the May 6, 2021 low water pressure event, ComEd's failure occurred at the very same time that ComEd was performing work on RLPS' electrical vault.[1]

DWM must thus respectfully disagree with the OIG's conclusion that the failure of a rented uninterruptible power supply (UPS) unit caused pressure in the water main to drop on both occasions in May 2021. DWM is in agreement that the UPS, owned and maintained by a City

[1] The OIG's report references a ComEd vault and substation next to RLPS. As a point of clarification, the ComEd vault is within the RLPS and contains transformers, not substations, providing power directly to the RLPS.

contractor specializing in electrical equipment, was not functional after the events of May 6th. However, that City contractor determined it was impossible to tell if ComEd's voltage sag and phase imbalance caused the damage to the UPS or if the UPS was not functioning prior to the May 6th event. DWM believes the UPS was functional because the unit was routinely checked during every shift.

II. Remedial Actions

The day after the first event on May 6, the City contractor specializing in electrical equipment replaced the damaged UPS unit with a different, larger rental. The same was done again the day after the second event on May 25. Since 2018, DWM has been diligently working on acquiring a permanent replacement for the UPS unit at the RLPS. As the OIG's report notes, DWM's search for a new UPS faced a number of hurdles, including design challenges as well as production and supply chain delays due to Covid-19. Despite these challenges, as the OIG's report states, DWM has made progress to put a new, permanent UPS in place at the RLPS.

In addition, a new power meter was installed at RLPS after ComEd's transformer to provide an accurate measure of the incoming power to RLPS directly, not just at the ComEd substation. As a result of this new power meter, multiple incoming ComEd voltage sags have been recorded since May 2021, none of which resulted in low pressure events due to DWM's diligence and ability to address each occurrence quickly.

In addition, DWM has taken numerous other actions to prevent the recurrence of such an event at RLPS or any other DWM facility, including initiating a capital project to evaluate the computer programming within the Program Logic Controllers (PLC's) that control the UPS' at all our critical facilities, evaluating different kinds of battery types for future UPS', and initiating the move of UPS maintenance logs to a digital workorder management system.

If you have any questions about DWM's response to the notification, please contact me at 312-744-7001.

Sincerely,

AndreaRHCheng

Andrea R.H. Cheng, Ph.D., P.E.
Commissioner