UNDERTAKING JT3.8

Undertaking

TO POINT TO THE COST-BENEFIT ANALYSIS WITH RESPECT TO THE WIFI POWERHOUSE.

Response

As discussed in Ex. L-D3-01-Staff-179, the Pickering Wi-Fi Power House Unit 1-8 ("Pickering Wi-Fi") is a capital project that is required to support greater efficiency, quality and timely completion of work by field staff, and also enabling improvements in safety, productivity and plant performance. The program began in early 2018 and is delivering benefits since being partially placed in service in 2020.

Fundamentally, the Pickering Wi-Fi project changes the way in which work is being performed. For example, the installation of Wi-Fi improves radiation monitoring and protection for staff and allows for better communication and access to information for employees and contractors working at the site. Ultimately, it contributes towards reducing human performance events, improving overall plant reliability and achieving OPG's business plan targets.

Due to Wi-Fi being part of the general IT infrastructure, OPG has treated the project as sustaining and has not conducted a project specific financial cost-benefit valuation. It would be difficult to meaningfully capture the aggregate benefits stemming from improvements in communication, access to and entry of information, safety, timeliness and risk mitigation across a broad range of station processes. However, OPG has considered how Pickering Wi-Fi foundationally enables a number of other initiatives that could not be undertaken at the station but for the installation of Wi-Fi. Examples of these initiatives and their benefits are discussed below. While these and other benefits are inherently varied and potentially overlapping, their value is expected to exceed the cost of the Pickering Wi-Fi.

- **Electronic Work Packages** – The implementation of Electronic Work Packages supports OPG's move from time-based to condition-based maintenance by allowing operators and engineers to capture and trend data immediately as well as access historical systems readings to make more timely system maintenance and performance decisions. This initiative also addresses risks of potential operational and engineering performance gaps that can be caused by use of manual and paper-based processes that historically take longer to update. OPG estimates that this initiative will result in productivity benefits valued at about $10 million per year, including benefits related to the

generation of work packages, posting of work data entry and efficiencies in the crew authorization process.

- **Monitoring and Diagnostic Center** – This initiative supports condition-based maintenance, which will improve utilization of resources and timely prioritization of maintenance work, and strengthens plant reliability performance through early detection of equipment degradation/anomalies and reducing risk of consequential failures and safety and environmental events. The Monitoring and Diagnostic Centre leverages Wi-Fi to utilize sensor and remote monitoring technology with diagnostic and prognostic analytics and advanced equipment health visualization. Further details can be found in Ex. L-F2-01-SEC-119 and Ex. L-A2-02-SEC-014.

- **Other Initiatives** – Other initiatives that leverage Pickering Wi-Fi include Foreign Material Exclusion Electronic ("FME")[1] Logging (a large scale implementation of an electronic log that reduces time spent by maintenance staff at Pickering and reduces risks of FME events, thereby reducing risks associated with outage performance) and Smart Procedures for Engineering (development of a program to convert maintenance procedures into "smart procedures" in order to propagate changes through multiple procedures at once, thereby improving field execution and efficiency of maintenance processes).

[1] Foreign Material Exclusion is a process and practice of preventing the introduction of foreign material into a system, equipment or component.