Energy Probe Interrogatory #33

Interrogatory

Reference:
Exhibit D2, Tab 2, Schedule 8, page 14

Preamble: "This team is also responsible for identifying trends and opportunities across the Program and industry and facilitating collaboration between OPG and Bruce Power. This collaboration includes identifying efficiencies and opportunities for innovation, sharing of Lessons Learned, and leveraging economies of scale. Ensuring that Lessons Learned and Strategic Improvements are identified and implemented, and that the expected performance gains are verified, is critical to achieving the planned unit-over-unit efficiencies as the Program moves through the refurbishments of Units 3, 1, and 4."

Please describe the efficiencies, innovations and economies of scale implemented through collaboration with Bruce Power.

Response

There have been many efficiencies and innovations implemented in the DRP through collaboration with Bruce Power. There have also been many examples of leveraging OPG's and Bruce Power's joint goals to achieve economies of scale. Each year since 2018, OPG and Bruce Power have issued publicly available status updates summarizing the benefits of the collaboration efforts in the previous year. The 2018 and 2019 Collaboration reports were provided in Ex. D2-02-03, Attachments 7 and 8. The OPG-Bruce Power 2020 Collaboration Report is included as Attachment 1.

The following are specific examples of innovations, efficiencies, and leveraging of economies of scale as a result of the OPG-Bruce Power collaboration:

Innovations and Efficiencies:

- Modified Installation Work Table: See Ex. D2-2-3, pp. 22-23. Collaboration with Bruce Power on the development of a modified work table is forecast to increase production by doubling the number of tools available to install calandria tubes and allowing for parallel work and more efficient transition between work activities. Savings are estimated to be up to 26 days on each of the Units 3, 1, and 4 refurbishment outages.

- Bellows Cut Tool Improvements: OPG and Bruce Power have continuously shared Lessons Learned on the performance of the bellows cut tools, ranging from factory acceptance and tool testing, to performance in the field. Building on the experience from each utility, OPG and Bruce Power were able to improve the speed and efficiency of the tool through their respective bellows removal series. With these improvements, OPG is expecting to save at least four days of critical path on each of the Units 3, 1, and 4 refurbishment outages.

- Film-Forming Amines: OPG and Bruce Power have collaborated through combined benchmarking and the confidential sharing of technical information to implement the Film-Forming Amines initiative for Unit 3. This initiative involves injection of the secondary side system of the nuclear units (condensers, heat exchangers, etc) during the lay-up process with an organic material that forms a nano-thin protective layer through adhesion to the inner surface of the secondary side components and vessels. The film-forming amine inhibits corrosion and assists in maintaining a dry lay-up condition of the secondary side throughout each unit's refurbishment outage. The project is projected to save OPG approximately $8M across Units 3, 1, and 4 from reduction in secondary side layup costs, including reduction in the number of de-humidifying skids by half compared to the Unit 2 refurbishment outage.

- Upper Feeder Removals: As a result of experience shared by Bruce Power, OPG implemented a hanging scaffold above the retube tooling platform that allowed cantilever removal to be executed in parallel with upper feeder removal. The ability to execute this work in parallel and the re-sequencing of certain other work is projected to save approximately eight days on critical path on each of the Units 3, 1, and 4 refurbishment outages.

Leveraging Economies of Scale:

- Trades Capacity Initiative: OPG and Bruce Power continue to collaborate to properly assess the trades availability risk and develop strategies to help mitigate it. The main focus of the OPG / Bruce Power collaboration has been to develop comprehensive trades demand profiles and supply and demand data on skilled trades. Trade demand forecasts are continually being updated and work is ongoing with trades unions, EPSCA, and other stakeholders to help improve the forecasted supply, as referenced above.

- Job-Ready Dispatch Initiative: OPG and Bruce Power have launched an initiative to allow the transfer of training credits for building trades staff. This initiative avoids unnecessary retraining of staff and reduces the time required to get building trades working at site. To date, 20 course credits have been identified that can be automatically transferred between OPG and Bruce Power, with only 9 of these requiring minor gap training. Further, in 2021, OPG and Bruce Power engaged the

trades unions to collaborate in the assessment and identification of union courses that are equivalent to those required at OPG and BP, which could help further reduce the time required to get the trades working at site, with no reduction in skills and/or proficiencies.

- Inter-Utility Security Clearance Agreement: OPG has an inter-utility agreement with its Canadian partners, including Bruce Power, that allows for the transfer of a security screening certificate for any individual that holds a valid security clearance. This reduces the time required to get trades cleared to work at OPG sites, including Darlington Refurbishment, without compromising security.