CAPITAL EXPENDITURES – NUCLEAR OPERATIONS

1.0 PURPOSE

This evidence provides an overview of the capital expenditures for OPG's nuclear facilities for the historical years, bridge year and the IR Term (excluding the Darlington Refurbishment Program ("DRP") which is addressed in Ex. D2-2-1). Period-over-period explanations are also included in this exhibit.

2.0 OVERVIEW

OPG's capital expenditures in support of its nuclear facilities are $413.0M, $382.3M, $481.4M, $302.9M and $221.2M in 2022, 2023, 2024, 2025 and 2026, respectively (Ex. D2-1-2, Table 1). As shown in Chart 1 below, these expenditures represent the sum of the following:

a) Capital expenditures included in the nuclear project portfolio. Annual capital expenditures in the nuclear project portfolio decrease from $393.9M to $191.8M over the 2022-2026 period. The key drivers of the capital expenditure component of the nuclear project portfolio are discussed in Section 3.1 below.

b) Capital expenditures on special projects that are managed outside of the project portfolio. There is one capital non-portfolio expenditure during the IR term – capitalization of the Darlington Water Treatment Plant Lease ($138.6M in 2024), as further described in Ex. D2-1-3, Section 3.2. In addition the Pickering Extended Operation (Ex. F2-3-1) and the Darlington Spacer Retrieval project (Ex. D2-1-3, Table 2d), both subject to the Capacity Refurbishment Variance Account, have expenditures during the period 2016 to 2021.

c) The capitalized portion of Darlington new fuel related to the loading of fuel following the restart of refurbished units. One-half of the nuclear fuel bundle cost of the new fuel load is capitalized when the new fuel is loaded into the reactor (Ex. F2-5-1, Section 2).

d) Capital expenditures on Minor Fixed Assets within nuclear. These are capitalized expenditures on portable assets used in the station or Operations and Project Support. Examples of Minor Fixed Assets are material handling equipment or sophisticated testing equipment. Minor Fixed Assets must meet a materiality of $25,000 per item to be capitalized (Ex. D4-1-1). They do not require a business case summary and are not managed as part of the project portfolio process.

Chart 1

Nuclear Operations Capital Expenditures

Line No	Category	2022 Plan	2023 Plan	2024 Plan	2025 Plan	2026 Plan
		(a)	(b)	(c)	(d)	(e)
1	**Project Portfolio - Capital**	393.3	344.8	296.7	284.2	191.8
2	**Darlington New Fuel**	0.0	16.5	16.9	0.0	18.1
3	**Darlington Water Treatment Plant Lease**	0.0	0.0	138.6	0.0	0.0
3	**Minor Fixed Assets**	19.6	21.0	29.2	18.7	11.4
4	**Total Capital Expenditures**	413.0	382.3	481.4	302.9	221.2

As a result of these and prior capital expenditures, OPG is requesting that the OEB approve forecast rate base in-service additions of $434.3M, $461.6M, $489.0M, $477.3M, and $348.3M in 2022, 2023, 2024, 2025 and 2026 respectively, as presented in Ex. D2-1-3, Table 4a-4b.

3.0 CAPITAL EXPENDITURES

Exhibit D2-1-2, Tables 2, 3 and 4a-4b present the actual and forecast Nuclear Operations capital expenditures for the period 2016-2026. Projects are categorized in the tables as follows:

- "Portfolio Projects (Allocated)" are capital expenditures for projects that have a Project Management Oversight Committee ("PMOC") approved budget and an approved Business Case Summary ("BCS"). This includes major capital spares. The approved BCS for these identified projects can vary from a very preliminary development BCS (e.g., Class 5 estimate) to an Execution BCS (e.g., Class 3 or better estimate).
- "Portfolio Projects (Unallocated)" is the difference between the total PMOC approved capital budget and the amount of capital allocated to projects in the Portfolio Projects (Allocated) category.

The Portfolio Projects (Unallocated) amount can be positive or negative.

i. When positive, it represents the amount of PMOC approved capital that remains available to undertake projects currently at the project identification or initiation phases,

once those projects move forward with a PMOC approved budget and an approved BCS. As projects progress beyond the project identification and initiation phases and the approved capital expenditures are fully allocated to capital projects with approved budgets, the annual unallocated amount declines to zero. A list of the capital projects currently without an approved BCS being considered for funding through the project portfolio is provided in Ex. D2-1-3, Tables 5a and 5b.

ii. When negative, this represents an adjustment as the PMOC approved budget is oversubscribed (i.e., there are more projects with approved BCSs then PMOC approved funding). OPG manages its projects portfolio to maintain annual capital expenditures at the level of approved funding.

- Exhibit D2-1-2, Tables 1, 2 and 4a-4b include capital expenditures that are in addition to those included in the capital project portfolio. These projects are approved separately from, and in addition to, the total PMOC approved capital budget referred to in the discussion of "portfolio projects" above and include Minor Fixed Assets, capital expenditures on special projects that are managed outside of the project portfolio, and the capitalized portion of Darlington new fuel.

3.1 Capital Expenditures in the Nuclear Project Portfolio: Drivers and Trends

Capital expenditures in the nuclear project portfolio over the IR term decline from $393.3M in 2022 to $191.8M in 2026. The trend primarily reflects the need for capital expenditures to replace obsolete and/or life-expired plant equipment at Darlington, offset by the elimination of capital expenditures at Pickering by 2022 in anticipation of its planned shutdown by the end of 2025.

The projected capital expenditures over the IR term are reasonable for the following reasons:

- **Capital expenditures over the IR term reflect continued preparation for Darlington 'second life' operations.** The capital spending for Darlington operations is separate and distinct from capital spending on refurbishment. Once the decision to refurbish Darlington to extend its life was approved, OPG began an extensive program to replace obsolete and/or life-expired plant equipment resulting in higher project related investments at

Darlington. This program continues throughout the IR term (there are 37 new Tier 1 projects compared to 18 new Tier 1 projects in EB-2016-0152). Prior to beginning the extensive replacement program, benchmarking of OPG's capital expenditures against industry peers (using the Electric Utility Cost Group ("EUCG") database) showed that OPG's average capital cost per MW Design Electrical Rating ("DER") was lower than that of the comparators, which placed OPG at or below first quartile.[1] Darlington's current three-year average capital cost per MW DER is now higher than most comparators so that OPG currently places in the fourth quartile. This change in benchmarking results reflects the impact of the higher project-related investments to replace obsolete and/or life-expired plant equipment that are necessary to prepare for 'second-life' operations.

- **Advancement of timing of certain project capital expenditures:** OPG has advanced the timing of certain projects into the IR term where replacement of equipment can occur during planned outages, to take advantage of the availability of the lengthy refurbishment outages during the period.
- **Capital Projects being undertaken (or may potentially be undertaken) have higher average expenditures**: In EB-2016-0152, the average project cost for active (ongoing or new) Tier 1 capital projects was $42.6M with the maximum being $129.5M for the Darlington Primary Heat Transport Pump Replacement/Overhaul. In this application, the average cost of the active Tier 1 projects (Ex. D2-1-3, Tables 1a, 1b, 1c and 1d) is $55.6M with a maximum of $278.8M for the Darlington 4kV Motor Refurbishment and Replacement project.

Capital expenditures (Portfolio-Allocated) have also been categorized in Ex. D2-1-2, Table 3 as regulatory, sustaining or value enhancing/strategic (Ex. A2-2-1, Attachment 3). Most of the projects being undertaken in the IR term are sustaining projects, which are projects to sustain and/or improve plant reliability. They include expenditures on systems and components approaching their end of life, or for which replacement parts are no longer readily available.

[1] The 2020 Benchmarking Report (Ex. F2-1-1, Attachment 2) shows that for the period 2014-2016, the three year average capital costs per MW DER was at or well below first quartile. Similar results were reported in the 2012 Benchmarking Report (EB-2013-0321, Ex. F2-1-1, Attachment 1) and the 2015 Benchmarking Report (EB-2016-0152, Ex. F2-1-1, Attachment 1).

Period-over-period variances for 2016-2022 are presented in Ex. D2-1-2, Table 4a-4b and are explained below. Exhibit D2-1-3 provides details of specific capital projects.

4.0 PERIOD-OVER-PERIOD CHANGES – IR TERM

2022 Plan versus 2021 Budget

The increase in capital spending planned for 2022 compared to the 2021 budget (+$5.4M) is due to increases in Portfolio Projects (Unallocated) (+$60.4M) and Portfolio Projects (Allocated) at Darlington (+$4.4M), offset by decreases in Operations and Project Support (-$43.0M), Pickering (-$8.9M), Minor Fixed Asset acquisitions (-$4.4M) and Pickering Extended Operations (-$2.9M).

The increase in Portfolio Projects (Allocated) at Darlington is primarily due to planned increases in spending on project #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (+$22.0M) and project #31535 Darlington Water Treatment Plant Interconnections (+$16.3M). These are offset by planned reductions in the following projects:

- #83664 Darlington Unit 2 Turbine/Generator Electronic Controls and Generator Auxiliaries Upgrade (-$7.6M)
- #83053 Darlington Shutdown Cooling Heat Exchanger Powerhouse Upper Level Service Water Piping Replacement (-$5.3M)
- #82947 Darlington Fuel Handling Head Major Component Replacement (-$4.2M)
- #80122 Darlington Main Power Output Protection System Replacement (-$3.9M)
- #80151 Darlington Fire Hazard Assessment and Fire Safe Shutdown Analysis Modifications (-$3.8M)
- #80144 Darlington Primary Heat Transport Pump Motor Overhaul (-$3.5M)
- #84400 Darlington Radiation Detection Equipment Obsolescence - Active Liquid Waste Liquid Effluent Monitor and Online Gas Chromatograph (-$3.1M)
- #84378 Darlington Emergency Power System Enhancements (-$3.0M)

The decrease in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to decreased spending in project #83039 Darlington Rapid Delivery Machine

(-$20.8M) following planned completion of engineering and fabrication of the Rapid Delivery Machine in 2021.

The decrease in Pickering Extended Operations is due to the planned completion of that initiative's capital projects in 2021.

The decrease in Portfolio Projects (Allocated) at Pickering is due to planned completion in 2021 of all but one project (#40972 Pickering PA Standby Generators Reliability Upgrades) in the Pickering portfolio of Capital projects.

The above reductions in spending on Portfolio Projects (Allocated) are partially offset by an increased unallocated portion of the nuclear project portfolio (+$60.4M), which reflects an expectation of yet to be approved new projects (Ex. D2-1-3, Tables 5a and 5b) to support Darlington operations to end of station life.

The reduction in Minor Fixed Asset spending is primarily due to reduction in Minor Fixed Asset acquisitions in Operations and Project Support (-$3.7M) and at Pickering (-$2.4M), offset by an increase in acquisitions at Darlington (+$1.6M).

2023 Plan versus 2022 Plan

The decrease in capital spending planned for 2023 compared to the 2022 plan (-$30.6M) is due to decreased spending in Portfolio Projects (Allocated) at Darlington (-$69.4M), Operations and Project Support (-$14.3M) and Pickering (-$0.4M), which are partially offset by increases in Portfolio Projects (Unallocated) (+$35.5M), Darlington New Fuel (+$16.5M) and Minor Fixed Assets (+$1.4M).

The decrease in Portfolio Projects (Allocated) at Darlington is mainly due to decreased spending in 2023 on project #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (-$45.1M) and the planned completion of project #80126 Darlington Emergency Power Generator 1 and 2 Replacement in 2022 (-$27.0M).

The decrease in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to decreased spending on project #83039 Darlington Rapid Delivery Machine (-$11.3M) following planned completion of the first phase of commissioning in 2022.

The decrease in Portfolio Projects (Allocated) at Pickering is primarily due to planned completion of project #40972 Pickering A Standby Generators Reliability Upgrades and #83061 Pickering Stator Cooling Water Alkalization and Make-up Deoxygenation in 2022, which is expected to be the final capital project prior to Pickering's end of commercial operations.

The above spending reductions on Portfolio Projects (Allocated) are partially offset by an increase in the unallocated portion of the nuclear project portfolio (+$35.5M), which reflects an expectation of yet to be approved new projects (Ex. D2-1-3, Tables 5a and 5b) to support Darlington operations to end of station life.

The increase in Darlington New Fuel (+$16.5M) in 2023 reflects the one-time full load of new fuel into Darlington Unit 3 prior to its return to service following refurbishment. There was no one-time full load of any reactor in 2022.

2024 Plan versus 2023 Plan

The increase in capital spending planned for 2024 compared to the 2023 plan (+$99.1M) is due to the recognition of the financial lease of the Darlington Water Treatment Plant in 2024 (+$138.6M) as well as Minor Fixed Assets (+$8.2M) and Darlington New Fuel (+$0.4M). These increases are offset by decreases in Portfolio Projects (Allocated) at Darlington (-$30.4M) and Operations and Project Support (-$2.8M) and Portfolio Projects (Unallocated) (-$14.9M).

The increase in Minor Fixed Asset spending is primarily due to increases in Minor Fixed Asset acquisitions in Operations and Project Support (+$8.0M; $7.8M for security-related assets), Pickering (+$0.1M), and Darlington (+$0.1M).

The decrease in Portfolio Projects (Allocated) at Darlington (-$30.4M) is primarily due to decreased spending in the following projects:

- #84551 Darlington Motor Operated Valve Replacement (-$7.4M)
- #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (-$7.3M)
- #31535 Darlington Water Treatment Plant Interconnections (-$5.7M)
- #31706 Darlington Vapour Recovery Button-Up Valve Replacements (-$4.4M)
- #83480 Darlington 4kV Motor Refurbishment and Replacement (-$4.1M)

In addition to the reductions in Portfolio Projects (Allocated) at Darlington, there is a decrease in the unallocated portion of the nuclear project portfolio (-$14.9M). The unallocated portion reflects an expectation of yet to be approved new projects (Ex. D2-1-3, Tables 5a and 5b) to support Darlington operations to end of station life.

The decrease in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to the reduced spending on project #83039 Darlington Rapid Delivery Machine (-$2.7M).

The Darlington Water Treatment Plant is discussed in Ex. D2-1-3.

2025 Plan versus 2024 Plan

The decrease in capital spending planned for 2025 compared to the 2024 plan (-$178.5M) is due to primarily to the Darlington Water Treatment Plant financial lease (-$138.6M), which was fully recognized in 2024. In addition, there are planned decreases in Portfolio Projects (Allocated) at Darlington (-$46.9M), Darlington New Fuel (-$16.9M) and Minor Fixed Asset Acquisitions (-$10.6M). These decreases are partially offset by Portfolio Projects (Unallocated) (+$33.1M) and Operations and Project Support (+$1.3M).

The decrease in Portfolio Projects (Allocated) at Darlington (-$46.9M) is primarily due to planned year-over-year decreases in spending in the following projects:

- #83053 Darlington Shutdown Cooling Heat Exchanger Powerhouse Upper Level Service Water Piping Replacement (-$9.3M)

- #80148 Darlington Nuclear Fuel Handling Control Computer Input/Output Subsystem (Multiplexer) and Inter-Processor Communication Replacement (-$7.3M)
- #82886 Darlington Fuel Handling Motor Replacement (-$6.8M)
- #84009 Darlington Air Operated Valve Replacement (-$6.4M)
- #80036 Darlington R22 Refrigerant Air Conditioning Unit Replacement (-$6.4M)
- #82842 Darlington Fuelling Handling Trolley Major Auxiliary Component Replacement (-$5.5M)
- #84235 Darlington Primary Heat Transport Liquid Relief Valves Modification (Waterhammer) (-$5.1M)

The increase in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to planned increases in spending on project #83039 Darlington Rapid Delivery Machine (+$1.3M) to complete the final phase of commissioning.

The above reductions in spending on Portfolio Projects (Allocated) are partially offset by an increased unallocated portion of the nuclear project portfolio (+$34.0M) which reflects expected new projects (Ex. D2-1-3, Table 5a and 5b) to support Darlington operations to end of station life.

The decrease in Darlington New Fuel (-$16.9M) is due to completion of the one-time, full load of new fuel (Ex. F2-5-1) into Darlington Unit 1 in 2024 with no fuel loading planned for 2025.

The decrease in Minor Fixed Asset spending is primarily due to decreases in Minor Fixed Asset acquisitions in Operations and Project Support (-$9.9M) and at Pickering (-$0.8M), offset by a slight increase at Darlington (+$0.1M).

2026 Plan versus 2025 Plan

The decrease in capital spending planned for 2026 compared to the 2025 plan (-$81.7M) is due to decreases in Portfolio Projects (Allocated) at Darlington (-$79.5M), Portfolio Projects (Unallocated) (-$9.9M), Minor Fixed Asset Acquisitions (-$7.3M), and Operations and Project Support (-$3.1M), which are partially offset by an increase in Darlington New Fuel (+$18.1M).

The decrease in Portfolio Projects (Allocated) at Darlington (-$79.5M) is mainly due to the planned completion of project #83664 Darlington Unit 2 Turbine/Generator Electronic Controls and Generator Auxiliaries Upgrade in 2025 (-$47.7M), as well as decreases in 2026 spending on the following projects:

- #83916 Darlington Fuel Handling Replacement of Fuelling Machine Calibration Facility (-$7.5M)
- #83484 Darlington Isolated Phase Bus Refurbishment (-$6.5M)
- #83297 Darlington Large Moderator Temperature Control Valve Replacement (-$6.1M)
- #80036 Darlington R22 Refrigerant Air Conditioning Unit Replacement (-$3.4M)
- #80150 Darlington Fire Resistant Fluid Pump Improvement (-$3.2M)
- #83053 Darlington Shutdown Cooling Heat Exchanger Powerhouse Upper Level Service Water Piping Replacement (-$3.2M)
- #31524 Darlington Station Roofs Replacement (-$3.2M)

The decrease in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to planned decreases in spending on project #83039 Darlington Rapid Delivery Machine (-$3.1M) following the planned completion of the project in 2025.

The increase in Darlington New Fuel (+$18.1M) is due to the one-time, full loading of new fuel into Darlington Unit 4.

OPG expects the number of new but not yet approved projects required to support operations at Darlington post-refurbishment to decline, which is reflected in the decreased unallocated portion of the nuclear project portfolio (-$9.9M).

The increase in Minor Fixed Asset spending is primarily due to decreases in Minor Fixed Asset acquisitions in Operations and Project Support (-$4.5M), and at Pickering (-$3.0M), offset by an increase at Darlington (+$0.1M).

5.0 PERIOD-OVER-PERIOD CHANGES – BRIDGE YEARS

2021 Budget versus 2021 OEB Approved

The increase in the 2021 Budget (+$208.2M) as compared to the 2021 OEB Approved amount is primarily due to increases in planned spending in Darlington (+$326.5M), Operations and Project Support (+$61.9M), Pickering (+$9.3M), Pickering Extended Operations (+$2.9M); and Minor Fixed Assets (+$4.7M). This is partly offset by a reduction in Portfolio Projects (Unallocated) (-$197.1M).

As discussed in Section 3.1 above, there are a number of reasons driving the increase in Portfolio Projects (Allocated) at Darlington. New projects account for the majority of the variance (+$242.7M) between the 2021 Budget and the 2021 OEB Approved. The top five new projects, which account for 43% of the new project variance, are as follows:

- #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (+$34.4M)
- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$26.3M)
- #83664 Darlington Unit 2 Turbine/Generator Electronic Controls and Generator Auxiliaries Upgrade (+$15.8M)
- #80122 Darlington Main Power Output Protection System Replacement (+$14.4M)
- #83053 Darlington Shutdown Cooling Heat Exchanger Powerhouse Upper Level Service Water Piping Replacement (+$12.8M)

Ongoing projects from EB-2016-0152 at Darlington account for +$83.9M of the variance. The following five ongoing projects account for 51% of the ongoing project variance:

- #31524 Darlington Station Roofs Replacement (+$12.7M)
- #31535 Darlington Water Treatment Plant Interconnections (+$10.9M)
- #31544 Darlington Radiation Detection Equipment Obsolescence (+$8.9M)
- #80022 Darlington OH180 Aging Management Hardware Installation (+$6.0M)
- #80036 Darlington R22 Refrigerant Air Conditioning Unit Replacement (+$4.6M)

The increase in Portfolio Projects (Allocated) in Operations and Project Support is entirely due to new projects. The top five projects account for 93% of the variance as follows:

- #83039 Darlington Rapid Delivery Machine (RDM) (+$36.8M)
- #82929 Security Project B (+$9.8M)
- #84140 Pickering Circumferential Wet Scrape Tool (CWEST) Enhancements (+$6.8M)
- #82930 Security Project C (+$3.5M)
- #84888 Inspection and Reactor Innovation (IRI) Steam Generator Manipulator and Automated Tube Plug (+$2.8M)

In EB-2016-0152, there were no capital projects or Minor Fixed Assets included in the Pickering Extended Operations ("PEXT") initiative. Subsequent to that filing, it was determined that certain projects met capitalization eligibility criteria.[2] In 2021, this is resulting in the +$2.9M variance to the 2021 OEB Approved budget for the following projects:.

- #84653 PEXT Pickering PA Standby Generator Shaft Driven Fuel Pump Installation (+$1.5M)
- #84794 PEXT Spacer Location and Relocation (SLAR) System Sustainability (+$0.4M)
- #84229 PEXT Emergency Power Generator 3 Permanent Installation (+$0.4M)
- #83965 PEXT Fire Water Supply Project (Capital) (+$0.3M)
- #84549 PEXT Universal Delivery Machine (UDM) East Annex Operations and Maintenance Area (+$0.3M)
- #84792 PEXT Firewater Buried Ring Header South (+$0.1M)

The increase in Portfolio Projects (Allocated) at Pickering is due to project #40972 Pickering PA Standby Generators Reliability Upgrades (+$3.1M and a number of Tier 3 projects.

The increase in planned Minor Fixed Asset acquisitions (+$4.7M) is primarily due to the following:

- Acquisition of additional tooling for Inspection and Reactor Innovation (+$3.1M)
- Acquisition of tooling at Pickering (+$1.5M)
- Acquisitions in support of Nuclear Training transferred from Corporate (+$0.4M)

[2] In EB-2016-0151, Ex. L.-6.5-1 Staff-119, OPG noted that as the work program associated with Pickering Extended Operations progressed and the scope of specific modifications was defined, it would be determined if a project met the capitalization criteria.

- Reduction in Minor Fixed Asset tools purchased at Darlington (-$1.3M)

The reduction in Portfolio Projects (Unallocated) reflects a more detailed scoping of the 2021 portfolio of approved projects compared to the scope known at the time of the EB-2016-0152 submission. Increases shown in Portfolio Projects (Allocated) corresponds to the increased definition of 2021 Portfolio Projects.

2021 Budget versus 2020 Budget

The planned spending in 2021 is increased (+$6.5M) compared to the 2020 Budget. Increases in Portfolio Projects (Allocated) at Darlington (+$50.8M), Operations and Project Support (+$15.3M) and Minor Fixed Asset acquisitions ($2.0M) are offset by decreases in Portfolio Projects (Allocated) at Pickering (-$17.7M), Portfolio Projects (Unallocated) (-$28.8M), and Pickering Extended Operations (-$15.1M).

The increase in Portfolio Projects (Allocated) at Darlington is primarily due to new projects not listed in EB-2016-0152 (+$44.5M). The top five new projects account for roughly all of the variance attributable to new projects as follows:

- #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (+$11.9M)
- #83035 Darlington Powerhouse Upper Level Service Water Piping Replacement(+$10.6M)
- #83480 Darlington 4kV Motor Refurbishment and Replacement (+$10.2M)
- #84400 Darlington Radiation Detection Equipment Obsolescence - Active Liquid Waste Liquid Effluent Monitor and Online Gas Chromatograph (+$6.0M)
- #83298 Darlington Secondary System High Priority Control Value Replacement (+$5.8M)

The increase in Portfolio Projects (Allocated) in Operations and Project Support is primarily due to #83039 Darlington Rapid Delivery Machine (+$11.1M) and #82929 Security Project B (+$6.5M) partially offset byt reductions in other projects.

The decrease in Portfolio Projects (Allocated) at Pickering is primarily due to Projects #83072 Pickering P58 Buried Blowdown Piping Replacement (-$7.1M), #40972 Pickering PA Standby Generator Reliability Upgrades (-$2.5M) and a number of smaller project variances as capital projects wind down in Pickering in advance of the end of commercial operations.

The decrease in Pickering Extended Operations spending in 2021 compared to 2020 (-$15.1M) reflects ramping down of spending towards the planned completion of the following capital projects:

- #83965 PEXT Fire Water Supply Project (-$3.3M)
- #84229 PEXT Emergency Power Generator 3 Permanent Installation (-$2.7M)
- #84549 PEXT Universal Delivery Machine (UDM) East Annex Operations and Maintenance Area (-$2.1M)
- #84792 PEXT Firewater Buried Ring Header South (-$2.0M)
- #84256 PEXT Algae Early Warning System (-$1.8M)
- #84794 PEXT Spacer Location and Relocation (SLAR) System Sustainability (-$1.5M)
- #84653 PEXT Pickering PA Standby Generator Shaft Driven Fuel Pump Installation (-$1.3M)
- #84603 PEXT Algae Mitigation Bubble Curtain (-$0.4M)

The decrease in Portfolio Projects (Unallocated) mainly reflects more detailed scoping of the portfolio in the 2020 Budget compared to the 2021 Budget as indicated by the increases in Portfolio Projects (Allocated).

2020 Budget versus 2020 OEB Approved

The increase in the 2020 Budget (+$122.6M) as compared to the 2020 OEB Approved amount is primarily due to increases in planned spending in Darlington (+$268.6M), Operations and Project Support (+$46.6M), Pickering (+$27.0M), Pickering Extended Operations (+$18.0M), and Minor Fixed Assets (+$2.6M). These increases are partially offset by a reduction in Portfolio Projects (Unallocated) (-$240.1M).

As discussed in Section 3.1 above, there are a number of reasons driving the increase in Portfolio Projects (Allocated) at Darlington. Both new projects not listed in EB-2016-0152 (+$201.7M) and existing Darlington projects (+$66.9M) account for the variance between the 2020 Budget and the 2020 OEB Approved.

The new Darlington projects that are the primary contributors to the variance are:

- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$34.3M)
- #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (+$22.5M)
- #83556 Darlington Turbine Hall Crane Controls Upgrade (+$14.6M)
- #84799 Darlington Primary Heat Transport Pump Rotor Inspect/Replace (+$10.7M)
- #83664 Unit 2 Turbine/Generator Electronic Controls and Generator Auxiliaries Upgrade (+$10.4M)
- #80122 Darlington Main Power Output Protection System Replacement (+$9.7M)
- #83559 Darlington East Irradiated Fuel Bay Permanent Fuel Inspection Equipment (+$8.8M)
- #83298 Darlington Secondary Systems High Priority Control Valve Replacements (+$6.9M)
- #82947 Darlington Fuel Handling Head Major Component Replacement (+$6.8M)
- #84009 Darlington Air Operated Valve Replacements (+$5.0M)

Ongoing Darlington projects that are the primary contributors to the variance are:

- #31524 Darlington Station Roofs Replacement (+$11.8M)
- #80036 Darlington R22 Refrigerant Air Conditioning Unit Replacement (+$8.7M)
- #80151 Darlington Fire Hazard Assessment and Fire Safe Shutdown Analysis Modifications (+$6.3M)
- #80023 Darlington Steam Generator Level Control Valve Replacement (+$4.7M)
- #31516 Darlington Station Fluorescent Lighting Fixtures Retrofit (+$4.4M)
- #33819 Darlington Major Pump-sets Vibration Monitoring System Upgrades (+$4.3M)
- #80022 Darlington OH180 Aging Management Hardware Installation ($3.7M)

- #31535 Darlington Water Treatment Plant Interconnections ($2.9M)
- #31532 Darlington Powerhouse Water Air Condition Units Replacement ($2.7M)
- #31544 Darlington Radiation Detection Equipment Obsolescence ($2.7M)

The increase in Portfolio Projects (Allocated) of +$46.6M in Operations and Project Support is primarily driven by the following new projects:

- #83039 Darlington Rapid Delivery Machine (+$25.5M)
- #84140 Pickering Circumferential Wet Scrape Tool (CWEST) Enhancements (+$7.5M)
- #82930 Security Project C (+$3.5M)
- #82929 Security Project B (+$3.3M)
- #84888 IRI Steam Generator Manipulator and Automated Tube Plug (+$2.0M)

The increase in Portfolio Projects (Allocated) at Pickering (+$27.0M) is primarily due to the following projects:

- #83072 Pickering P58 Buried Boiler Blowdown Pipe Replacement (+$7.2M)
- #40972 Pickering PA Standby Generator Reliability Upgrades (+$5.6M)
- #84555 Pickering Unit 1and Unit 4 Third Power Supply Uninterruptible Power Supply Replacement (+$2.4M)
- #49154 Pickering B Replacement of Obsolete Instrumentation and Control Equipment (+$1.7M)
- #84511 Pickering Humidifier Condensate Return Line Modifications on MCR/CER HVAC (+1.6M)
- #84501 Pickering RAB Active Drainage Sump Pump Mesh Screen Installation (+$1.5M)
- #83038 Pickering P14 Digital Control Computer System Monitor (+$1.2M)
- #80130 Pickering Emergency and Mobile Satellite Communication Systems Replacement (+$1.1M)
- #83061 Pickering Stator Cooling Water Alkalization and Make-up Deoxygenation (+$1.0M)

The following are the projects and Minor Fixed Asset amount that comprise the +$18.0M variance between the 2020 Budget and 2020 OEB Approved:

#83965 PEXT Fire Water Supply Project (Capital) (+$3.5M)
#84229 PEXT Emergency Power Generator 3 Permanent Installation (+$3.0M)
#84653 PEXT PA Standby Generator Shaft Driven Fuel Pump Installation (+$2.8M)
#84549 PEXT Universal Delivery Machine (UDM) East Annex Operations and Maintenance Area (+$2.3M)
#84792 PEXT Firewater Buried Ring Header South (+$2.1M)
#84794 PEXT Spacer Location and Relocation (SLAR) System Sustainability (+$1.9M)
#84256 PEXT Algae Early Warning System (+$1.8M)
#84603 PEXT Algae Mitigation Bubble Curtain (+$0.4M)
Additionally, there is +$0.4M in Pickering Extended Operations-specific Minor Fixed Asset acquisitions planned for 2020.

The increase in planned Minor Fixed Asset acquisitions (+$2.6M) is primarily due to the following:

- Acquisition of additional tooling for Inspection and Reactor Innovation (+$2.1M)
- Acquisition of tooling at Pickering (+$0.4M)
- Acquisitions in support of Nuclear Training transferred from Corporate (+$0.4M)
- Reduction in Minor Fixed Asset tools purchased at Darlington (-$1.5M)

The Portfolio Projects (Unallocated) primarily reflects the more detailed scoping of the portfolio in 2020 as reflected in the increases in Portfolio Projects (Allocated) compared to the scope known at the time of the EB-2016-0152 submission.

2020 Budget versus 2019 Actual

The increase in planned spending in 2020 compared to actual spending in 2019 (+$5.7M) is due to planned increases in Portfolio Projects (Allocated) (+34.1M), and Pickering Extended Operations (+$9.0M); offset by reductions in Portfolio Projects (Unallocated) (-$18.5M), Darlington New Fuel (-$16.8M) and Minor Fixed Assets (-$2.1M).

The increase in Portfolio Projects (Allocated) is due to planned increases in Darlington (+$28.4M) and Operations and Project Support (+$17.4M) offset by reduced spending at Pickering (-$11.6M).

The increase in planned spending at Darlington is due to 73 projects with increased year-over-year spending (+$140.9M), largely offset by 59 projects with lower year-over-year spending (-$112.5M). Notable period-over-period variances include:

- #83296 Darlington Main Output Transformer and Unit Service Transformer Replacement (+$18.6M)
- #83664 Darlington Unit 2 Turbine/Generator Electronic Controls and Generator Auxiliaries Upgrade (+$10.4M)
- #31544 Darlington Radiation Detection Equipment Obsolescence (+$8.2M)
- #82947 Darlington Fuel Handling Head Major Component Replacement (+$6.4M)
- #80023 Darlington Steam Generator Level Control Valve Replacement (+$6.3M)
- #83298 Darlington Secondary System High Priority Control Valve Replacement (+$6.0M)
- #80036 Darlington R22 Refrigerant Air Conditioning Unit Replacement (+$6.0M)
- #83559 Darlington East Irradiated Fuel Bay Permanent Fuel Inspection Equipment (+$5.7M)
- #84009 Darlington Air Operated Valve Replacement (+$5.0M)
- #83556 Darlington Turbine Hall Crane Controls Upgrade (+$4.6M)

The increase in planned spending in Operations and Project Support is primarily due to projects #83039 Darlington Rapid Delivery Machine (+$13.5M), and #84140 Pickering Circumferential Wet Scrape Tool (CWEST) Enhancements (+$7.4M).

The $9.0M increase in spending on Pickering Extended Operations between 2020 Budget and 2019 Actuals is due primarily to the following projects:

- #84653 PEXT PA Standby Generator Shaft Driven Fuel Pump Installation (+$2.6M)
- #84549 PEXT Universal Delivery Machine (UDM) East Annex Operations and Maintenance Area (+$2.3M)
- #84229 PEXT Emergency Power Generator 3 Permanent Installation (+$1.4M)

- #84794 PEXT Spacer Location and Relocation (SLAR) System Sustainability (+$1.3M)
- #84792 PEXT Firewater Buried Ring Header South (+$1.2M)
- #84256 PEXT Algae Early Warning System (+$0.7M)
- #84603 PEXT Algae Mitigation Bubble Curtain (+$0.4M)
- #83965 PEXT Fire Water Supply Project (Capital) (-$0.8M)

There was no budgeted amount for Portfolio Projects (Unallocated) in 2019 as all capital expenditures were part of the Portfolio Projects (Allocated). The Portfolio Projects (Unallocated) in 2020 is -$18.5M, which indicates that the nuclear project portfolio is oversubscribed.

The decrease in planned spending at Pickering is due primarily to the completion of Project #83668 Pickering High Pressure Turbine Spindle Capital Spares (-$10.7M) in 2019.

The reduction in Darlington New Fuel is due to no new fuel loading being scheduled in 2020 compared to 2019.

6.0 PERIOD-OVER-PERIOD CHANGES – HISTORICAL YEARS

2019 Actual versus 2019 OEB Approved

The increase in spending in 2019 compared to the OEB Approved (+112.9M) is due to increased spending on Portfolio Projects (Allocated) at Darlington (+$188.9M), Pickering (+38.6M), Operations and Project Support (+$29.2M), Pickering Extended Operations (+$9.0M); and Darlington New Fuel (+$1.5M), which is partly offset by reductions in Portfolio Projects (Unallocated) (-$159.4M).

Approximately 69% of the increase in Portfolio Projects (Allocated) spending at Darlington (+$188.9M) was driven by new projects started since EB-2016-0152 (+$130.2M). The primary contributors to this variance are the following projects:

- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$40.9M)
- #84799 Darlington Primary Heat Transport Pump Rotor Inspect/Replace (+$10.6M)

- #83556 Darlington Turbine Hall Crane Controls Upgrade (+$10.0M)
- #83049 Darlington Copper Piping Replacement (+$9.9M)
- #80122 Darlington Main Power Output Protection System Replacement (+$9.5M)

The total variance for ongoing projects in Darlington from EB-2016-0152 (+$58.8M) is primarily due to the following projects:

- #31524 Darlington Station Roofs Replacement (+$15.2M),
- #31710 Darlington Shutdown Cooling Heat Exchanger Replacement (+$10.0M),
- #31426 Darlington Fuel Handling Inverter Replacement (+$6.3M),
- #31516 Darlington Station Fluorescent Lighting Fixtures Retrofit (+$4.8M), and
- #31526 Darlington Feeder Scanner Replacement (Capital) (+$4.5M),

as well as a number of smaller variances totalling +$18M.

These increases are offset by reduced spending in projects #80111 Darlington Generator Stator Core Capital Spare (-$15.0M), #31544 Darlington Radiation Detection Equipment Obsolescence (-$8.3M), and #31528 Darlington Permanent Detectors for Startup Instrumentation (-$2.3M) as well as a number of smaller variances for a total of (-$35.4M).

The increase in Portfolio Projects (Allocated) at Pickering is primarily due to the following projects:

- #83668 Pickering High Pressure Turbine Spindle Capital Spares (+$10.7M)
- #83072 Pickering P58 Buried Boiler Blowdown Pipe Replacement (+$7.0M)
- #40972 Pickering PA Standby Generators Reliability Upgrades (+$4.6M)
- #40691 Pickering PB Emergency Power Generator and Main Output Power Protective Relay Replacement (+$4.2M)
- #84861 Pickering A Emergency Service Water Pumps Replacement (+$2.9M)

The increase in Portfolio Projects (Allocated) in Operations and Project Support is primarily driven by the following projects:

- #83039 Darlington Rapid Delivery Machine (+$12.1M)
- #82929 Security Project B (+$6.4M)

- #82930 Security Project C (+$5.2M)

The reduction in the Portfolio Projects (Unallocated) (-$159.7M) reflects the shift of capital expenditures from Portfolio Projects (Unallocated) to Portfolio Projects (Allocated), which is shown by the increased amounts in Portfolio Projects (Allocated).

The increase in the actual 2019 cost of the Darlington New Fuel for Unit 2 (+$1.5M) compared to forecast is due to higher costs for the one-time full load of new fuel into Darlington Unit 2 prior to return to service following the refurbishment of the reactor.

The +$9.0M variance from the 2019 OEB Approved budget is primarily attributable to the following projects:

- #83965 PEXT Fire Water Supply Project (Capital) (+$4.4M)
- #84229 PEXT Emergency Power Generator 3 Permanent Installation (+$1.6M)
- #84256 PEXT Algae Early Warning System (+$1.1M)
- #84792 PEXT Firewater Buried Ring Header South (+$0.9M)

2019 Actual versus 2018 Actual

The increase in spending in 2019 compared to 2018 (+$13.4M) is due to increased spending on Darlington New Fuel (+$16.8M), Pickering Extended Operations (+$6.2M), and Minor Fixed Assets (+$2.4M) offset by a decrease in Portfolio Projects (Allocated) (-$12.0M).

A period-over-period variance for Darlington New Fuel is due to new fuel loading in 2019 six months prior to the completion of refurbishment of Unit 2 in 2020. There was no new fuel loading in 2018.

The +$6.2M variance between 2019 Actual and 2018 Actual for Pickering Extended Opertions is primarily attributable to the following projects:

- #84229 PEXT Emergency Power Generator 3 Permanent Installation (+$1.6M)
- #83965 PEXT Fire Water Supply Project (+$1.6M)
- #84256 PEXT Algae Early Warning System (+$1.1M)

- #84792 PEXT Firewater Buried Ring Header South (+$0.9M)

The increase in Minor Fixed Asset spending is due to increased spending on Security-related equipment partially offset by reduced spending in Inspection and Reactor Innovation.

The decrease in spending on Portfolio Projects (Allocated) is due to reduced spending at Pickering (-$7.4M), and Operations and Project Support (-$10.1M), offset by Darlington (+$5.5M).

Notable period-over-period variances in Pickering spending include:

- #83088 Pickering PA Low Pressure Feedwater Heat Exchanger Replacement (-$6.3M)
- #83061 Pickering Stator Cooling Water Alkalization and Make-up Deoxygenation (-$3.5M)
- #40691 Pickering PB Emergency Power Generator and Main Output Power Protective Relay Replacement (-$2.6M)
- #40985 Pickering Replacement of Obsolete Online Chemistry Analysers (-$1.4M)
- #41027 Pickering Fukushima Phase 2 Beyond Design Basis Event Emergency Mitigation Equipment (-$1.1M)
- #49298 Pickering PA Replacement of Unit 1, Unit 4 and Irradiated Fuel Bay A Stack Monitors (-$1.0M)
- #80130 Pickering Emergency and Mobile Satellite Communication Systems Replacement (-$1.0M)
- #40972 Pickering PA Standby Generators Reliability Upgrades (+$4.4M)
- #83072 Pickering P58 Buried Blowdown Piping Replacement (+$4.4M)
- #84861 Pickering PA Emergency Service Water Pumps Replacement (+$2.9M)
- #84501 Pickering Reactor Auxiliary Bay Active Drainage Sump Pump Mesh Screen Installation (+$1.2M)

Notable projects contributing to the iincrease in spending at Darlington is due to the following:

- #84799 Darlington Primary Heat Transport Pump Rotor Inspect/Replace (+$10.6M)
- #31524 Darlington Station Roofs Replacement (+$10.4M)
- #80122 Darlington Main Power Output Protection System Replacement (+$9.1M)

- #83556 Darlington Turbine Hall Crane Controls Upgrade (+$9.1M)
- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$6.6M)
- #31710 Darlington Shutdown Cooling Heat Exchanger Replacement (-$11.5M)
- #83035 Darlington Powerhouse Upper Level Service Water Piping Replacement (-$7.3M)
- #31532 Darlington Powerhouse Water Air Conditioning Unit Replacement (-$6.7M)
- #83049 Darlington Copper Piping Replacement (-$6.0M)
- #73566 Darlington Primary Heat Transport Pump Motor Replacement (-$5.0M)

The decrease in Operations and Project Support spending (-$10.1M) is due primarily to project #83039 Darlington Rapid Delivery Machine (-$9.3M), owing to the 2019 portion of the $16M write-off for the project.

2018 Actual versus 2018 OEB Approved

The increase in spending in 2018 compared to 2018 OEB Approved (+$123.9M) is due to increased spending on the Portfolio Projects (Allocated) at Darlington (+$145.1M), Pickering (+$44.0M), Operations and Project Support (+$24.9M), Pickering Extended Operations (+$2.8M), and Minor Fixed Assets (+$1.7M) partially offset by reduction in Portfolio Projects (Unallocated) (-$94.6M).

Increases in Portfolio Projects (Allocated) spending at Darlington (+$145.1M) are due in large part to the following projects:

- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$22.8M)
- #83049 Darlington Copper Piping Replacement (+$15.9M)
- #80111 Darlington Generator Stator Core Spare (+$13.7M)
- #31710 Darlington Shutdown Cooling Heat Exchanger Replacement (+$10.8M)

Additionally, a portion of the increase (+$74.8M) is due to the start of new projects. Primary contributors to this variance are the following projects:

- #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$22.8M)
- #83049 Darlington Copper Piping Replacement (+$15.9M)

- #83035 Darlington Powerhouse Upper Level Service Water Piping Replacement (+$9.1M, not listed in EB-2016-0152)
- #84235 DNR0 Primary Heat Transport Liquid Relief Valves Modifications (Waterhammer) (+$7.1M)

The increase in the Project Portfolio (Allocated) at Pickering (+$44.0M) is due in large part to project #83668 Pickering High Pressure Turbine Spindle Capital Spares (+$10.7M) and project #83088 Pickering A Low Pressure Feedwater Heat Exchanger Replacement (+$7.1M), which were both not identified until after the OEB submission.

Project #83965 PEXT Fire Water Supply Project resulted in a +$2.8M increase in 2018 Pickering Extended Operations capital spending.

The increase in Operations and Project Support Portfolio Projects (Allocated) spending (+$24.9M) is primarily due to projects #83039 Darlington Rapid Delivery Machine (+$7.5M), #82930 Security Project C (+$6.4M), and #82929 Security Project B (+$6.0M).

The reduction in the Portfolio Projects (Unallocated) (-$94.6M) reflects the shift of capital expenditures from Portfolio Projects (Unallocated) to Portfolio Projects (Allocated) as indicated by the increased spending in Portfolio Projects (Allocated).

2018 Actual versus 2017 Actual

The increase in 2018 spending compared to 2017 (+$27.6M) is due to increased spending on Portfolio Projects (Allocated) at Darlington (+$49.4M), Pickering Extended Operations (+$2.8M), Operations and Project Support (+11.1M) and Minor Fixed Assets (+$2.0M) which is offset by reduced spending on Portfolio Projects (Allocated) at Pickering (-$36.7M), and Darlington Spacer Retrieval (-$1.0M).

The increase in Portfolio Projects (Allocated) spending at Darlington (+$49.4M) is mainly due to project #80126 Darlington Emergency Power Generator 1 and 2 Replacement (+$33.3M)

and project #83049 Darlington Copper Piping Replacement (+$12.4M) both of which started execution in 2018.

Project #83965 PEXT Fire Water Supply Project resulted in a +$2.8M increase in 2018 Pickering Extended Operations capital spending.

Decreases in Pickering Portfolio Projects (Allocated) spending (-$36.7M) are mainly due to two Fukushima projects #41027 Pickering Fukushima Phase 2 Beyond Design Basis Event Emergency Mitigation Equipment (-$18.3M), and #49158 Pickering PB Fukushima Phase 1 Beyond Design Basis Event Emergency Mitigation Equipment (-$10.1M) that were placed in-service in 2017.

The increase in Operations and Project Support (+$11.1M) is due mainly to project #83039 Darlington Rapid Delivery Machine (+$9.8M).

2017 Actual versus 2017 OEB Approved

The increase in spending in 2017 compared to 2017 OEB Approved (+$75.2M) is due to increased spending on the Portfolio Projects (Allocated) at Darlington (+$56.4M), Pickering (+$61.2M), Operations and Project Support (+$11.9M), and Darlington Spacer retrieval (+$0.8M). This increase is partially offset by the reductions in Portfolio Projects (Unallocated) (-$48.8M) and Minor Fixed Assets spending (-$6.2M).

Increases in Portfolio Projects (Allocated) spending at Darlington (+$56.4M) is primarily due to ramp-up of capital spend of project #73566 Darlington Primary Heat Transport Pump Motor Replacement (+$25.3M), and project #31508 Darlington Fukushima Phase 1 Beyond Design Basis Event Emergency Mitigation (+$17.7M). Additionally, a portion of the increase is due to the start of new projects, notably project #84235 Darlington Primary Heat Transport Liquid Relief Valves Modifications (Waterhammer) (+$13.1M), and project #83035 Darlington Powerhouse Upper Level Service Water Piping Replacement (+$7.8M).

Increases in Pickering Portfolio Projects (Allocated) spending (+$61.2M) is primarily due to two Fukushima-related projects #41027 Pickering Fukushima Phase 2 Beyond Design Basis Event Emergency Mitigation Equipment (+$14.7M), and #49158 Pickering B Fukushima Phase 1 Beyond Design Basis Event Emergency Mitigation Equipment (+$7.6M), as well as the reclassification of project #83088 Pickering A Low Pressure Feedwater Heat Exchanger Replacement (+$11.7M) from the OM&A Portfolio to Capital. The remaining variance is due to 45 projects, each with variances below $5.0M.

Increases in Operations and Project Support Portfolio Projects (Allocated) (+$11.9M) is due primarily to projects #66600 Pickering Machine Delivered Scrape (+$3.0M), #83051 Darlington Feeder and Fuel Channel Baseline Inspections (+$2.9M), #66594 Inspection and Maintenance Services CIGAR (Channel Inspection and Gauging Apparatus for Reactors) Gap System and Drive Reliability (+$1.9M), #82930 Security Project C (+$1.8M), and #83039 Darlington Rapid Delivery Machine (+$1.3M).

The reduction in the Portfolio Projects (Unallocated) (-$48.8M) reflects the shift of capital expenditures from Portfolio Projects (Unallocated) to Portfolio Projects (Allocated) as indicated by the increases in Portfolio Projects (Allocated).

2017 Actual versus 2016 Actual

The increase in 2017 spending compared to 2016 (+$53.9M) is due to increased spending on Portfolio Projects (Allocated) at Darlington (+$51.9M), Pickering (+$1.5M) and Operations and Project Support (+$7.6M), which is slightly offset by reduced spending on Darlington Spacer Retrieval (-$3.8M) and Minor Fixed Asset (-$3.3M).

The increase in Portfolio Projects (Allocated) spending at Darlington (+$51.9M) is primarily due to the ramp-up of capital spending to replace expired and obsolete equipment. Notable increases include project #73566 Darlington Primary Heat Transport Pump Motor Replacement (+$11.0M), project #84235 Darlington Primary Heat Transport Liquid Relief Valves Modifications (Waterhammer) (+$9.9M), project #31508 Darlington Fukushima Phase

1 Beyond Design Basis Event Emergency Mitigation (+$9.0M), and project #83035 Darlington Powerhouse Upper Level Service Water Piping Replacement (+$7.4M).

The increase in Operations and Project Support Portfolio Projects (Allocated) (+$7.6M) is due primarily to project #83039 Darlington Rapid Delivery Machine (+$11.1M), primarily offset by project #25918 Darlington Sally Port Physical Barrier Installation (-$3.9M).

The decrease in Darlington Spacer Retrieval (-$3.8M) is due to the ramp down of spending as the project neared completion in 2017.

2016 Actual versus 2016 Budget

The decrease in spending in 2016 compared to 2016 OEB Budget (-$52.5M) is due to decreased spending on the Portfolio Projects (Allocated) at Darlington (-$33.0M), Pickering (-$7.5M), Minor Fixed Assets (-$7.9M), and Darlington Spacer Retrieval (-$1.4M), as well as the shift of capital expenditures from Portfolio Projects (Unallocated) to Portfolio Projects (Allocated) (-$4.8M). This decrease is slightly offset by an increase in Portfolio Projects (Allocated) spending for Operations and Project Support (+$2.1M).

The decrease in Portfolio Projects (Allocated) at Darlington (-$33.0M) is due to project #31524 Darlington Station Roofs Replacement (-$9.9M) where spending was delayed because the project was deferred in 2014 and only restarted in 2016, project #31535 Darlington Water Treatment Plant Replacement (-$6.5M), which was deferred to re-evaluate the strategy for replacement, and project #80126 Darlington Emergency Power Generator 1 and 2 Replacement (-$6.4M), which was deferred to a 2017 start date.

Decreases in Portfolio Projects (Allocated) at Pickering (-$7.5M) are mainly due to projects #40972 Pickering PA Standby Generators Reliability Upgrades (-$5.2M) due to modifications, and project #80069 PA Firewater Buried Ring Header Replacement (North Loop) (-$5.3M), which deferred construction work to later years.

The decrease in Darlington Spacer Retrieval (-$0.7M) is due to completion of the 2016 scope of work under-budget.

The increase in Portfolio Projects (Allocated) Operations and Project Support ($2.1M) is due to project #25918 Darlington Sally Port Physical Barrier Installation (+$4.9M), which was offset by project #80027 Security and Emergency Services ("SES") Station Personnel Emergency Accounting (-$3.3M) and other minor variances.