# PROGRAM STRUCTURE AND OVERSIGHT

## 1.0 OVERVIEW

This exhibit describes the methods by which OPG, as the Program owner, will manage the delivery of all scope for Units 3, 1, and 4 ("the Remaining Units") safely, on time, on budget, and to the required quality. The need to manage simultaneous refurbishment outages and the strengthening of OPG's project management infrastructure have led to an evolution in OPG's organizations and approaches to structuring its refurbishment execution and planning activities.

In EB-2016-0152, OPG described in detail its role as owner of the Darlington Refurbishment Program ("Program" or "DRP") and the organizational structure and approach it implemented to execute this role.[1] Here OPG builds upon that discussion to present the new organizations for managing execution of Unit 3 refurbishment and the planning for subsequent units, managing change, reporting results to internal and external stakeholders and providing oversight.

To execute the Remaining Units refurbishment, including completing the ongoing Unit 3 refurbishment and planning for the subsequent units, OPG created the Refurbishment Planning and Execution Organization comprised of the follow groups: Refurbishment Execution – Unit 3 organization; Refurbishment Support, and Refurbishment Planning - Units 1 and 4. Section 2 discusses these groups, their activities and their component organizations.

The Change Management, Cost Monitoring, Reporting, and Program Oversight organizations are described in Sections 3 to 5. Together, these organizations enable OPG to continue to work efficiently and cooperatively with the contractors to plan and execute the Remaining Unit refurbishments, to effectively manage risks and changes, provide appropriate internal and external reporting, and enable effective project oversight.

[1] EB-2016-0152, Ex. D2-2-2, pp. 3-10, and Ex. D2-2-9.

## 2.0 ORGANIZATION FOR REMAINING UNITS EXECUTION

OPG continually investigates and implements organizational strategies to improve the execution of projects. This section discusses the organization that OPG has implemented to manage the refurbishment of the Remaining Units.

### 2.1 Program Management by Enterprise Project Management Office

The industry best practices implemented for the DRP are now being applied to all large projects across OPG. Exhibits A2-2-1 and D2-1-1 discuss OPG's enterprise-wide Project Excellence Initiative. A major milestone of that initiative was the establishment of the Enterprise Projects Organization ("EPO") in September 2018, as described further in Ex. D2-1-1.

Program Management is provided to the DRP through the Project Management Office and the Commercial Management and Project Assurance divisions of the EPO.[2]

### 2.2 DRP Organization to Manage the Remaining Units

This section describes the Refurbishment Planning and Execution organization which OPG has put in place to manage the planning and execution of the Remaining Units. OPG executed the Unit 2 refurbishment outage without overlapping another unit's refurbishment outage in order to minimize risks and to adhere to the principle, as outlined in the 2013 Long Term Energy Plan,[3] of demonstrating successful completion of the first unit's refurbishment before proceeding to the next unit. As described in Ex. D2-2-3 and Ex. D2-2-5, the first execution of overlapping refurbishment outages is scheduled to occur when the Unit 3 and Unit 1 outages are expected to be underway simultaneously starting in February 2022. From that date until the planned completion of the Unit 1 refurbishment outage in April 2025, OPG will be managing overlapping refurbishment outages. Accordingly, as introduced in Ex. D2-2-

[2] EB-2016-0152, Ex. D2-2-2, Sections 3.2.3 to 3.2.9, pp. 6-10 discuss the groups, which at the time, jointly provided Program Management scopes of work to the DRP. These groups were: Engineering, Nuclear Safety, Contract Management, Managed Systems Oversight, Program Fees and Other Support, Supply Chain and Planning and Controls.

[3] Government of Ontario, *Achieving Balance – Ontario's Long term Energy Plan,* December 2013, pg. 29

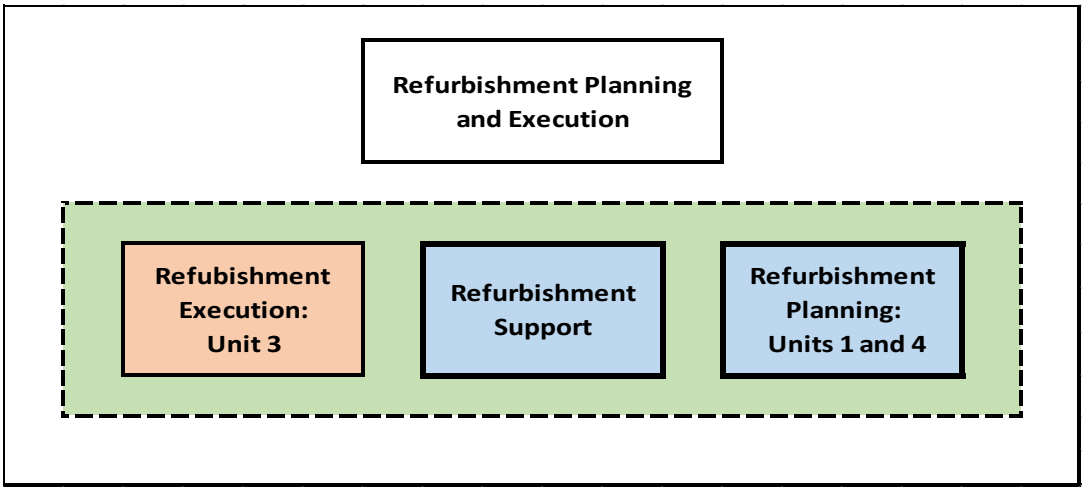
3, Section 5.1.1, OPG, in conjunction with its main contractor, CanAtom, evaluated how both organizations could manage the Remaining Units as one integrated project.

A major change was implementation of the Organizational Evolution Strategic Improvement including the Project Centric Organization, Workstream Specialization and the One Team Approach. Project Centric Organization and Workstream Specialization concepts treat phases of the refurbishment outages of the Remaining Units (e.g., the Lead-in and Removal Phase) as a project, and build and maintain a specialized work team which is focused solely on executing that phase of each refurbishment outage. This work team moves from the prior to the subsequent unit to complete similar scopes of work. The One Team Approach, which is being implemented in the organization of certain areas of the Program such as the Retube and Feeder Replacement project, emphasizes the need to staff with the best resource available for any particular role by drawing from both OPG and CanAtom personnel. Section 2.2.1 below provides a more detailed explanation of these concepts.

Staffing the Refurbishment Planning and Execution organization required mapping of existing project management resources from the Unit 2 organization into the new organization and adding capability as required. A very important consideration during this process was retention, to the degree possible, of experienced project management staff and highly-trained and skilled employees from the Unit 2 refurbishment project.

The resultant Refurbishment Planning and Execution organization which was implemented to manage the Unit 3 refurbishment outage and to complete the planning and preparations for Units 1 and 4 is shown in Figure 1.

**Figure 1: Refurbishment Planning and Execution Organization – Remaining Units**




The Refurbishment Planning and Execution Organization shown in Figure 1, along with the Change Management, Cost Monitoring, Reporting, and Program Oversight organizations described below in Sections 3 to 5, enables OPG to effectively and efficiently perform its role as owner during the execution of the Remaining Units' refurbishments. The roles executed by these organizations provide confidence that:

- work is controlled and all changes tracked using the integrated schedule and cost performance monitoring tools;
- worker protection, conventional and nuclear safety, environmental safety, and plant safety requirements are met;
- quality requirements are met;
- risks are appropriately managed;
- detailed planning for Units 1 and 4, as described in Ex. D2-2-3, Section 3, is completed on time and with quality, including implementation of Lessons Learned and Strategic Improvements;
- appropriate progress reporting is done; and,
- effective internal and external oversight is performed.

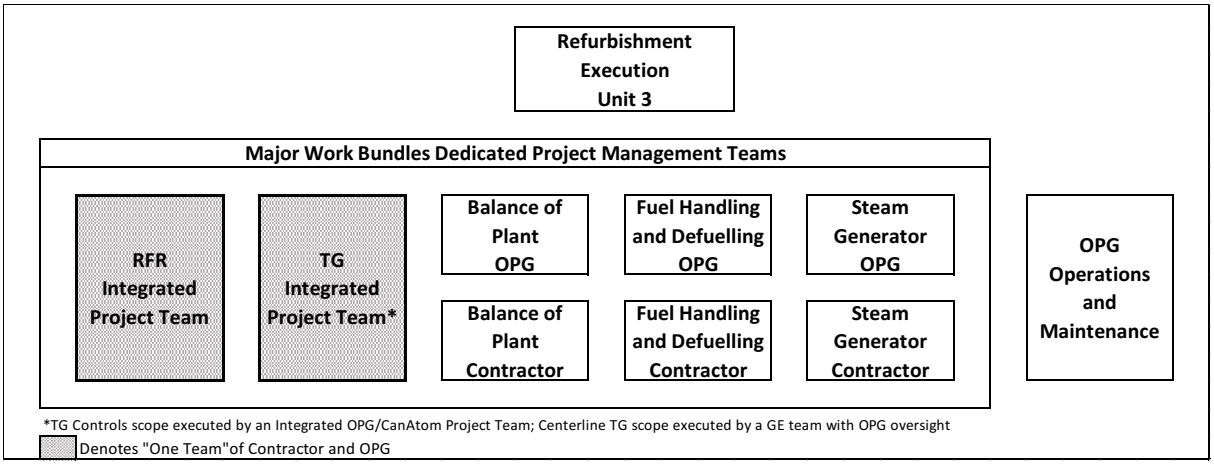
The responsibilities of the three divisions which comprise the Refurbishment Planning and Execution organization depicted in Figure 1, namely: (1) Refurbishment Execution – Unit 3;

(2) Refurbishment Support; and, (3) Refurbishment Planning – Units 1 and 4, are described in the following sections.

### 2.2.1 Refurbishment Execution - Unit 3

The Refurbishment Execution – Unit 3 organization contains the dedicated Project Management Teams for the five Major Work Bundles, as well as OPG Operations and Maintenance, as shown in Figure 2. High-level descriptions of the scopes of work in each of the Major Work Bundles are provided in Ex. D2-2-4, Attachment 1.

**Figure 2: Refurbishment Execution Unit 3**




#### 2.2.1.1 Major Work Bundle Project Management Teams

Each of the five Major Work Bundles has a dedicated Project Management Team as shown in Figure 2. These teams are responsible for ensuring the effective planning and successful execution of the scope of work in that Major Work Bundle, including that the responsible contractors deliver the contracted services safely, to the quality required, on time and on budget. The Project Management Teams are also supported by other OPG functional groups, for example, Engineering.

The implementation of the components of the Organizational Evolution Strategic Improvement are discussed below.

RFR Project Management Team:

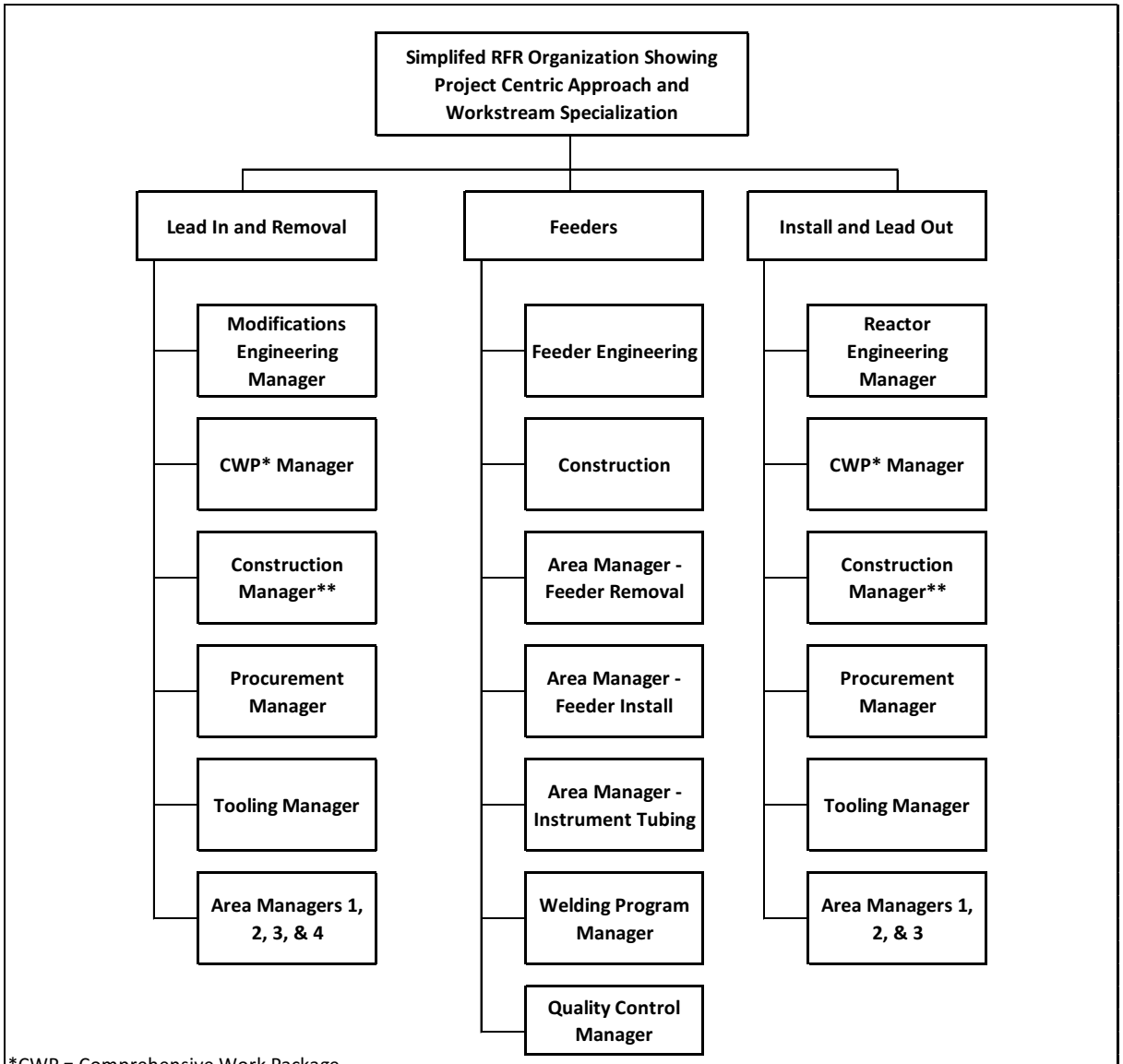
The majority of the RFR Major Work Bundle scope is critical path, including, Isolate from Operating Units, Remove Interferences, Fuel Channel Removal, Inspections and Cleaning, Fuel Channel Install and Restore from Operating Units.[4] The RFR scope also includes the removal and installation of feeder pipes. As explained in Ex. D2-2-4, Section 3.2, CanAtom has responsibility for executing the RFR scope under an Engineering, Procurement and Construction ("EPC") agreement.

As depicted in Figure 2, the RFR Major Work Bundle will be executed using the One Team Approach with an integrated team of OPG and CanAtom staff. In building and maintaining the RFR Project Management Team, the best-qualified individuals for lead roles such as project directors and project managers, were selected from both OPG and CanAtom resources.

Figure 3 is a simplified overview of the structure of the RFR Project Management Team, which is responsible for providing oversight and executing the RFR Major Work Bundle.

[4] Ex. D2-2-5, Figure 1 shows a simplified schedule of a refurbishment outage, highlighting the major critical path steps.

**Figure 3: RFR Project Management Team Organization**




*CWP = Comprehensive Work Package
**Quality Control reports to the Construction Manager in the Lead In and Removal and Install and Lead out Teams

As can be seen from Figure 3 above, the organization will have three major dedicated teams. Each of these specialized teams will have all of the dedicated expertise needed to oversee and execute the work safely, with quality, on budget and on schedule. Dedicated positions include Engineering, Procurement and Construction leads, as well as Quality Control and, where required, specialized positions such as a Tooling Manager and a Welding Program

Manager. In accordance with the One Team Approach, any of these roles could be staffed by an OPG or CanAtom employee, based on the best qualified individual.[5]

Area Managers will co-ordinate all of the work in a particular set of work activities. For example, in the Lead In and Removals team, there will be an Area Manager for Bulkhead Installation and Containment Testing, a critical set of work activities in a refurbishment outage, which results in the unit under refurbishment being isolated from the containment structure of the operating units. As noted in Ex. D2-2-3, Bulkhead Installation is one of the areas where OPG is implementing Lessons Learned from Unit 2 to help achieve the planned schedule improvements forecast for Unit 3. Other examples of the use of Area Managers include: (1) in the Install and Lead Out team, there will be an Area Manager for the installation activities on the face of the reactor, including calandria tube installation and fuel channel installation; and (2) in the Feeders team, there will be separate Area Managers for Feeder Removal, Feeder Installation and for the installation of instrumentation tubing.

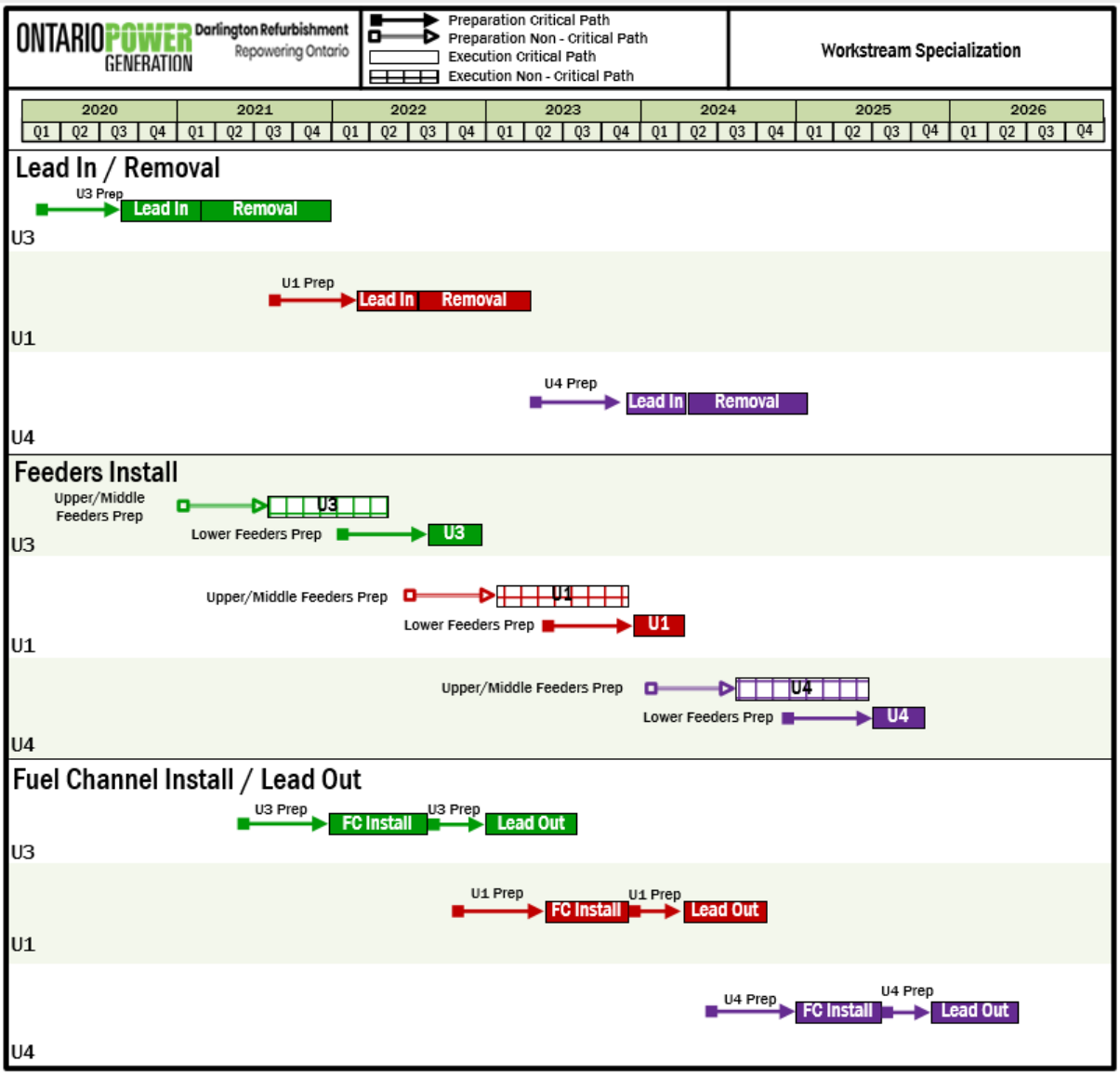
The RFR Project Management Team demonstrates the application of the Project Centric Organization. Structuring into three standalone specialized project teams (i.e., Lead In and Removal, Feeders, and Install and Lead Out) facilitates effective and efficient decision-making by ensuring that accountabilities and authority are at the right level of the organization and that there are clear escalation protocols for when decisions need to be made with input from more senior team members. This approach allows for a broader scope of control by distributing decision-making deeper into the organization.

The RFR Project Management Team also demonstrates the application of Workstream Specialization. Workstream Specialization will result in a shift from generalization to specialization. Under generalization, multifunctional, cross-trained teams moved from one work series to the next in sequence. Under specialization, high-proficiency teams will execute the same work series on each of the Remaining Units, thereby building on their expertise and experience enabling them to continue to perform at a high level on each

[5] Ex. D2-2-3, Section 5.1.1

subsequent unit. This approach is particularly beneficial given the overlapping refurbishment outages planned for Units 3, 1, and 4. The specialized Lead In and Removal, Feeders, and Install and Lead Out teams will move from Unit 3 to Unit 1 to Unit 4 as depicted in Figure 4.

**Figure 4: Workstream Specialization Showing Preparation and Execution Windows**




The project directors will co-ordinate the work to determine when the specialized team under their authority will transition from executing Unit 3 to preparation and execution activities for

Unit 1, then on to preparation and execution activities for Unit 4. Preparation activities for subsequent units will include incorporation of Lessons Learned, e.g., any required process changes, Comprehensive Work Package ("CWP") improvements, tooling improvements and any identified opportunities for training improvements.

Workstream Specialization will apply not only to the Project Management Teams but also, to the extent feasible, to the trades. For example, for feeder installation, which requires highly proficient welders, OPG and CanAtom will work collaboratively to retain a select number of the best performing welders to assist the Project Management Team, These individuals will assist with preparations for the next unit, including the identification and implementation of Lessons Learned, assisting with improvements to CWPs, and helping to improve training programs and methods.

Retaining the best performers helps the entire team achieve peak performance levels earlier than they would otherwise. The experience that the best performers have gained from having completed the same work activities on a prior unit, combined with their involvement in the preparatory activities described above, positions them to lead by example and to impart knowledge to the wider team of trades, some of whom will be new to the activities.

<u>Turbine Generator:</u>

The Turbine Generator ("TG") Major Work Bundle scope is not critical path. However, it is a significant undertaking and, as discussed in Ex. D2-2-3, the TG Controls upgrade scope is a First-of-a Kind ("FOAK") activity at OPG because the first installation of the turbine controls and generator excitation controls upgrades will occur during the Unit 3 refurbishment. This scope includes replacement of the analog controls with digital controls for both the turbine and the generator excitation, upgrades to the generator stator, and upgrades to various auxiliary systems. OPG has taken measures to mitigate the risks associated with this FOAK scope, including building a full-scope simulator to allow testing and training on the new digital controls before they are installed and commissioned.

As explained in Ex. D2-2-4, Section 3.3, the work under the TG Major Work Bundle will be divided between General Electric ("GE") and CanAtom. As depicted in Figure 2, the TG Major Work Bundle scope completed by CanAtom, will also be executed using the One Team Approach. The specialized scope of work to be executed by GE will be done by GE's team, with OPG providing oversight.

Balance of Plant, Fuel Handling and Defuelling, and Steam Generators

For the Balance of Plant, Fuel Handling and Defuelling, and Steam Generators Major Work Bundles, separate OPG and Contractor Project Management Teams will be maintained. OPG and its contractors will continue to optimize the teams and to streamline roles, working collaboratively to identify any opportunities to eliminate unnecessary duplication, in order to achieve the common goal of completing the DRP safely, with the requisite quality, on schedule and on budget.

2.2.1.2 Operations and Maintenance

As described in EB-2016-0152, Refurbishment Operations and Maintenance is both a functional and an execution organization which has a significant role during the execution of a unit's refurbishment outage.

As was done for Unit 2, Refurbishment Operations and Maintenance will continue to provide functional support to the Major Work Bundles and also serves as the "custodian" of the operating units in the plant by ensuring that the refurbishment work does not adversely impact those operating units.

The Refurbishment Operations and Maintenance function serves as the "controlling authority" for the units undergoing refurbishment within the construction island. In this role, Refurbishment Operations and Maintenance is responsible for the safety of the plant, its workers, and the environment, and ensures, in conjunction with the Darlington Station Operations and Maintenance Department, that plant operation is in accordance with Canadian Nuclear Safety Commission license requirements. Refurbishment Operations and Maintenance ensures that the relevant structures, systems and components are maintained

and refurbished to the appropriate nuclear standards and returned to service in top-performing condition.

Refurbishment Operations and Maintenance provides the interface between the refurbishment project (both OPG refurbishment staff and contractors' staff) and station operations, thereby ensuring that the complex processes of laying up the unit, accepting the unit from station operations, then returning the systems to service and transferring control back to station operations are executed safely and with quality.

Refurbishment Operations and Maintenance accountabilities include developing and executing a phased return-to-service plan for each of the 58 systems required to be returned to service before a unit can be restarted. This plan is executed as soon as feasible after construction completion is declared for a system, thereby minimizing, to the extent feasible, the large peak in the volume of work usually experienced near the end of a unit's refurbishment, as systems are returned to service. The detailed understanding of the regulatory requirements, including documentation requirements, in the Refurbishment Operations and Maintenance function, helps OPG and its contractors to manage and resolve any regulatory or documentation issues quickly. This reduces the likelihood of regulatory issues or incomplete or poor quality documentation becoming a bottleneck and delaying the unit's return to service.

### 2.2.2 Refurbishment Support

The Refurbishment Support division shown in Figure 1 consists of Construction Support, Work Management, Quality Management, and Lessons Learned and Strategic Initiatives. The roles performed by Construction Support, Work Management, and Quality Management were described in detail in EB-2016-0152, Ex. D2-2-9, pp. 2-5. A brief recap is provided below.

#### 2.2.2.1 Construction Support

The Construction Support team supports OPG's contractors by helping to ensure they are able to perform their work safely, in accordance with the Owner's responsibilities under the

*Occupational Health and Safety Act*. This team also helps contractors to maintain the overall schedule, by resolving issues in the field to help enable the contractors to complete their work, such as assisting with the resolution of missing equipment, interference with other work groups, or assisting with resolving constructability issues. This team also monitors for changing risks during field execution.

2.2.2.2 Work Management

Work Management is responsible for developing, monitoring, and controlling the unit refurbishment outage integrated execution schedule. While each project and contractor is responsible for producing a valid and executable schedule, Work Management is responsible for validating each individual schedule and integrating it into the overall schedule for execution. Work Management also ensures that work is properly planned prior to execution, that scope is managed and controlled, co-ordinates day-to-day work control and interfacing activities, resolves issues, initiates and controls changes, and monitors and reports on risks, schedule status and performance metrics.

2.2.2.3 Quality Management

The Quality Management team performs quality surveillances at all stages of execution planning and construction while also addressing critical and emerging issues. For example, this team oversees the completion of work and confirms that regulatory requirements are being met by checking the quality of documentation to verify that the completed work is traceable, as required by the Darlington station's operating license, and in compliance with applicable standards.

2.2.2.4 Lessons Learned and Strategic Initiatives

The Lessons Learned and Strategic Initiatives team is responsible for oversight of the Lessons Learned process, as described in Ex. D2-2-3, Section 4, as well as for oversight of the implementation of Strategic Improvements, such as those described in Ex. D2-2-3, Section 5. 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.

2.2.3 Refurbishment Planning – Units 1 and 4

The role of the Refurbishment Planning - Units 1 and 4 organization shown in Figure 1 is to execute the planning process for Units 1 and 4, through to breaker open, in a manner similar to the planning done for Unit 3, as explained in Ex. D2-2-3. The responsibilities of this organization include the development of the execution plans for Units 1 and 4 by: (1) incorporating Lessons Learned and Strategic Improvements in the plans for Units 1 and 4; (2) establishing planning milestones and managing those milestones to completion; (3) overseeing schedule and cost development and refinement, including on-going updates to risk assessments and to contingency requirements; and, (4) planning and executing Segment 0 work for Units 1 and 4.

As described above in Section 2.2.1, as specialized teams complete the Unit 3 field work activities for which they are accountable and complete the Lessons Learned for that unit, they will then be assigned to perform planning activities for the same work on Units 1 and 4. The Refurbishment Planning – Units 1 and 4 organization will ensure that these transitions are effectively managed to maintain a Project Centric approach while continuing to integrate planning at the unit level. The Refurbishment Planning Units 1 and 4 organization will transition in phases into the execution organization for Units 1 and 4.

## 3.0 CHANGE MANAGEMENT

OPG has implemented a robust change management process for the DRP which provides guidance on how changes are assessed, implemented and reported. This was described in EB-2016-0152, Ex. D2-2-9, Section 5. The purposes of change management and the change management process, unchanged since EB-2016-0152, are: (1) to document the nature and causes of changes; (2) to analyze and minimize the impact of the changes on Program scope, cost and schedule; (3) to record and control cost, schedule and scope impacts of

these changes against approved baselines; and, (4) to manage the proper allocation of contingency funds as a result of approved changes.

The principles that OPG applies with respect to change management include:

- the executing organization will first attempt to mitigate the impacts of any change so that the change is managed at the lowest authorized level of the organization;
- a change that has a significant potential impact on scope, cost and schedule is reviewed in detail and the recommended direction is approved at the appropriate level;
- only after a change is approved by the appropriate authority level is the work assigned for action by the executing organization; and,
- changes are not made solely for the purpose of correcting performance issues that are within the control of the work program owner.

The change control process is applied from project inception through completion. The constraints of cost, schedule and scope will be continuously and rigorously managed by rejecting or approving changes and subsequently incorporating approved changes into the revised Program and performance measurement baseline, where applicable.

Control and usage of contingency, including authority levels, is described in Ex. D2-2-6, Section 3.3.

## 4.0 REPORTING

Reliable and accurate performance reporting keeps OPG and its contractors well-informed on the progress of a unit's refurbishment. This results in alignment and ensures that the proper information is available to make timely and collaborative project-related decisions. Performance reporting provides information through the collection, collation and presentation of performance related data. Accurate and timely performance reporting:

- communicates information to the right stakeholders such that the appropriate decisions can be made, actions taken, or awareness generated;
- communicates the status of the program including any trends, variance from plan, and how the potential variance is being addressed or corrected; and,

- ensures information is reliable, accurate and transparent.

OPG has made quarterly status reports available to the public through its website since the start of the refurbishment of Unit 2, and plans to continue this practice until the completion of the Program. The quarterly report covers the four project pillars of safety, quality, cost, and schedule.

In accordance with the EB-2016-0152 Decision and Order,[6] OPG has also issued detailed annual reports to the OEB at the end of 2018, 2019 and 2020 on the progress of the Program during those respective years. (See Ex. D2-2-2, Attachments 1 and 2 for the 2018 and 2019 reports). Going forward, OPG proposes to continue providing annual reports with the same scope as set out in Chart 1 below until the end of the Program.

[6] Ontario Energy, Board, Decision and Order, EB-2016-0152, Ontario Power Generation, Inc., Application for payment amounts for the period January 1, 2017 to December 31, 2021, December 28, 2017, p. 43-45.

**Chart 1: Annual OEB Reporting on the Program**

| Category | Measure |
|---|---|
| Introduction and Table of Contents | N/A |
| Executive Summary | N/A |
| Overall Program Status | • High level overview of the Program |
| Progress | • Key Achievements<br>• % Complete |
| Safety | • Total Recordable Injury Frequency<br>• Lost hours due to injuries<br>• Explanation of any safety programs/initiatives launched by OPG/contractors |
| Quality | • # of Significant Field Rework Events |
| Cost | • Cost Performance Index<br>• Life-to-date cost<br>• Actual versus forecast cumulative capital costs<br>• Forecast to Complete<br>• Estimate at Complete |
| Schedule | • Current schedule performance<br>• Schedule Performance Index<br>• Status of Key Milestones<br>• Critical Path Progress<br>• Forecasted Completion Dates |
| Engineering | • Summary of engineering status and key issues |
| Procurement | • Summary of procurement status and key issues |
| Construction | • Summary of construction progress and analysis of any material variances from plan<br>• Summary of any material labour issues<br>• Summary of any material environmental issues |
| Testing, Start-up and Commissioning | • Summary of systems tested, commissioned, restarted, and any material key results and issues |
| Program Risks and Risk Management | • Key risks and mitigation<br>• Key issues and corrective actions |
| Staffing | • Actual staffing levels against plan<br>• Changes to staffing plan<br>• Efforts to fill open positions |

## 5.0 OVERSIGHT

As described below, OPG's assurance plan remains largely the same as provided in EB-2016-0152[7] with appropriate adjustments given the completion of Unit 2 and the current stage of the Program.

OPG employs an integrated assurance model and plan for the Program that is comprised of several layers of oversight, including from Program staff, external contractors, Program leadership, enterprise leadership and external advisors. The model ensures appropriate oversight during the planning, execution readiness and execution phases of the Program, with a focus on key risk areas. Specifically, oversight helps the Program to meet safety, quality, cost and schedule expectations, by ensuring that issues are identified and resolved expeditiously, and that transparent and accurate information flows up to appropriate levels within the organization, including to OPG's Board of Directors.

Key aspects of OPG's Program oversight include:

1. *Project-specific oversight processes and practices* based on risk management, operating experience, contract requirements, scope of work and reviews of contractor performance by each of the Major Work Bundle Project Management Teams, as well as by the Refurbishment Support organization.
2. *Oversight of the Refurbishment Execution Organization* by the DRP leadership team and by other divisions within the EPO, including:
    - *Program Assurance* within the Commercial Management and Project Assurance group, which coordinates surveillance and reviews by OPG's Nuclear Oversight, Field Construction, and Quality Management divisions. These groups conduct audits, assessments, and/or surveillance across the projects focused on identifying emerging problems and opportunities in time to address them, including process improvements, Lessons Learned and providing coaching and assistance to the project team and contractors as part of an effective risk management culture. Program Assurance also

[7] EB-2016-0152, Ex. D2-2-9, Section 8.

manages the interface between the DRP and external organizations providing oversight, including the Office of the Auditor General; and,

- *Project Management Office*, which ensures cost and schedule compliance including forecasting, change management, and milestone adherence, effective risk management, and complete and accurate metrics and progress reports.

3. *OPG's Internal Audit group*, which provides oversight of a broad range of areas such as scheduling, cost estimates, contractor procurement, quality assurance, cost management, contractor time keeping and EPC contracts. OPG's Internal Audit group has functional independence from management. The Internal Audit group publishes the results of audits and requires that management actions be assigned, and tracked to completion. The results of all audits are presented to OPG's Chief Executive Officer and the OPG Board of Directors.
4. *Industry Assistance and Assessment*, industry organizations are utilized to provide technical assistance in potentially significant risk areas to help the Program team understand the current performance compared to industry standards and to provide recommendations for closing the gaps.
5. The *Canadian Nuclear Safety Commission*, which performs Program-focused assessments to confirm implementation of the Nuclear Management System and compliance with license requirements.
6. *OPG Board of Directors Oversight*

- T*he Darlington Refurbishment Committee of OPG's Board of Directors* ("DRC"), which supports Program level oversight by OPG's Board of Directors.
- *Independent Advisor to the DRC*, which supports the DRC's oversight:
  - During the Definition Phase and during execution of the Unit 2 refurbishment outage, the OPG Board had engaged *Burns McDonnell/Modus Strategic Solutions* ("BMcD/Modus") to provide oversight on their behalf. During the course of Unit 2, BMcD/Modus delivered 15 detailed quarterly reports to the DRC regarding OPG's Unit 2 execution performance, as well as on all other major scopes of work being executed. In 2019, BMcD/Modus also reviewed the Unit 3 Execution Estimate and control budget and delivered two reports to the DRC.

- Given the completion of Unit 2, OPG's Board of Directors re-assessed the type of oversight required and decided to engage the Refurbishment Construction Review Board ("RCRB") to continue to provide independent oversight services for the remainder of the Program.[8] RCRB members have experience in senior oversight and/or advisory capacities, with project management related to a "mega-projects", experience with nuclear plant operations, other extensive nuclear power, regulatory, construction management, major contract management, and project controls experience. The RCRB is normally comprised of three to five external members, typically with support from one internal OPG member. It meets approximately three to four times per year, depending on Program status and schedule.

As events, trends, and risks are identified, the Program Assurance team collaborates with accountable project/line owners and all internal and external assurance providers to re-evaluate and prioritize oversight activities. This includes helping to identify the appropriate scope for project self-assessments, Nuclear Oversight and Internal Audit reviews. This may also include working with senior executives to identify and engage special advisors or an advisory team to perform targeted reviews of specific aspects of the Program. This agile "check and adjust" cycle ensures that oversight activities evolve to meet project demands and enhance performance. The schedule of assessments, along with findings and outcomes of completed assessments, are reviewed on a periodic basis with representatives from all assurance providers to ensure that: (1) the planned assessments are timely and appropriately risk-based; (2) cross-functional opportunities are identified and leveraged; and, (3) duplicative assurance efforts are reduced or eliminated where possible.

[8] During the refurbishment outage of Unit 2, the RCRB supported Program level oversight by the Chief Project Officer, Chief Nuclear Officer and the Chief Executive Officer by providing independent assessments of Program progress, estimates and schedules, facilitating early intervention and correction of any shortfalls in execution.