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**Refurbishment Unit Planning Window Milestones**

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## Revision Summary

| Revision Number | Date | Comments |
|---|---|---|
| R000 | 04SEP2019 | First revision. |

## 1.0 PLANNING MILESTONE DIRECTION

This document takes authority from NK38-MAN-09701-10005 Nuclear Refurbishment Work Management.

This document describes the Darlington Nuclear Refurbishment Execution Window and Segment 0 window milestones. For the associated Program and Segmented milestones, refer to Sheet MLST of this document.

This document defines a sequence of accountabilities and milestones (T-weeks) by which multiple departments, along with their vendor partners, are required to perform. These milestones build upon each other to identify, select, plan, schedule and execute work in a manner that helps ensure high standards of safety and reliability.

Table 1 specifies the requirements to be achieved by each “T-week” in the process.

### 1.1 Compliance Date

The requirements of this document are effective immediately and it supersedes the use of Darlington Refurbishment Expectation 24 for DNRU3, DNRU1 and DNRU4.

### 1.2 Exceptions

The milestone requirements in this document are not applicable to Unit 2, other than the post-window lessons learned requirement.

## 2.0 EXECUTION WINDOW MILESTONES

Execution Window milestones represent activities that are required to plan the successful execution of a specific scope of work prior to the associated execution window, and those activities required to gather lessons learned following window closure.

These window milestones include preparing execution documentation (i.e., workplans), receiving and staging materials, acquiring lay down areas, verifying the availability of tools, equipment, and facilities, and finalizing project specific logic and work protection.

Project Managers shall plan their projects to meet these milestones. Where projects are complex and work may take longer than a milestone window provides, the Project Manager is responsible to initiate the work early enough to meet the milestone end date. Projects will also have deliverables that may not be associated with these milestones. It is the responsibility of the projects to identify these deliverables and ensure they are planned appropriately to ensure readiness to execute the work.

Section 3.4 details the roles and responsibilities for ensuring milestones are met on time and with quality.

## 3.0 MILESTONE MANAGEMENT

Successful achievement of Darlington Refurbishment goals require the support, participation and commitment of all departments and stratum levels. This commitment should involve active, visible participation in activities (communications, meetings), which ensure work readiness.

### 3.1 Meetings

To ensure readiness, recurring weekly meetings will be set up where progress to date, path to success and challenges will be discussed. Such meetings will include window readiness (T-10), scope freeze (T-8) and final readiness (T-2). A specific terms of reference will be used for each aforementioned meeting, which describes the objective, agenda, quorum, expectations and deliverables.

In addition to the above execution window meetings, weekly Segment 0 meeting will be conducted until such time as determined by the Outage Manager are no longer required.

### 3.2 Milestone Tracking and Reporting Framework

Progress on milestones for each window and associated Project will be made available weekly to Refurbishment staff. It will provide an indication of dates at risk, outstanding and completed work. Corresponding data will be pulled from BI as a primary source. Additional sources will include EBX, ROOMS, ATK, ESM3, PTT, P6, etc.

### 3.3 Escalation and Milestone Recovery Plans

If the weekly distribution of window milestone progress identifies a window or Project which is at risk prior to the T-10 window readiness meeting, then an ad-hoc escalation meeting may be requested by the Outage Manager, or delegate.

Formal actions in RMO or recovery plans, as determined by the Outage Manager, or delegate, may be requested based on the level of risk to refurbishment readiness.

If the T-10 window readiness meeting, T-8 scope freeze meeting or T-2 final readiness meeting identifies a window or Project which is at risk, the associated meeting Terms of Reference will describe the required escalation decision making process.

### 3.4 Roles and Responsibilities

Project Managers are ultimately accountable for the successful completion of all window milestones. Window milestone sub owners, as defined in Table 1, are responsible to provide support and meet identified deliverable expectations as defined. It is expected that at the start of each window milestone that lessons learned from previous Unit(s) be reviewed and incorporated (as applicable).

**All Department Managers**

- Commits to and meets Refurbishment window milestones identified, with quality.

**Engineering Manager**

- Ensures all Engineering holds are cleared in accordance with the window milestone timelines (including workplans).
- Ensures active participation at all meetings.

**Maintenance Manager**

- Ensures work is fully planned and assessed in accordance with N-PROC-MA-0002, Work Planning.
- Provides accurate resource availability and supply projections to support the work via the RBT.
- Notifies Outage Manager of any changes in resource levels past T-19.
- Ensures walkdowns are performed and comments are fed back and resolved.
- Ensures assigned work is executed as planned.
- Ensures active participation at all meetings.
- Ensures review of Project, Vendor and Minor Modifications work packages.
- Develops strategy to resolve resource gaps.
- Recommends bundling of approved work to maximize maintenance efficiency.
- Resolves BMU and work package planner (WPP) holds.

**Operations Manager**

- Provides input to prioritization of work.
- Provides operational safety review of scheduled work.
- Ensures operability considerations are identified and communicated by the established “T” milestones.
- Ensures plant alignment is adequate for maintenance to occur taking into account reactor safety and operational considerations.
- Provides accurate resource availability and supply projections to support the work via the RBT.

- Supports assessment and schedule development activities.
- Ensures preparation of permits and walkdowns to the established "T" milestones.
- Completes operability review of the scope and any proposed or required changes to the frozen execution schedule or scope.
- Commits to and meet process milestones (detailed assessment, reviews, permit preparation or walkdowns).

**Other Supporting Managers**

- Supports assessment and schedule development activities.
- Develops strategy to resolve resource gaps.

**Projects and Vendor Managers**

- Ensures Project work commits to and meets Refurbishment window milestones identified.
- Ensures funding is available for projects.
- Provides fully assessed work packages to Work Control.

**Reactor Safety Manager**

- Ensures review of the schedule and ensures reactor safety related considerations are identified and communicated by the established "T" milestones.

**Supply Chain Manager**

- Ensures all material related holds are cleared by identified milestones.
- Ensures parts required are staged by identified milestone.

**Outage Manager** (responsibilities to be delegated to Section Manager Outage or Work Control Team Leader as appropriate)

- Oversees and continuously improves the work management process with focus on reducing backlogs and improving plant conditions, by ensuring a high quality schedule is provided to the execution groups.
- Co-ordinates the overall process.
- Identifies any known resource gaps to Maintenance and /Operations.

- Delivers a balanced schedule of ready-work.
- In collaboration with Other Work Control Managers, allocates resources to support on-line, outage execution, and outage pre/post-requisite work, as per N-GUID-06931-10001 guidelines.
- Ensures owners are identified, as required, as soon as practical, for work programs or individual WOs to provide appropriate oversight during work planning and execution.
- Ensures issues pertaining to the resource split between on-line and outage are resolved.
- Distributes manual window readiness report, until such time that a validated automated reported is available.
- Identified need for ad-hoc window or Project escalation meetings to discuss readiness and mitigate or eliminate risks.

**Scheduling Manager**

- Ensure Project schedules are accepted in accordance with window and program milestones.
- Ensures Project schedules are published in accordance with window milestones.

**Construction Manager**

- Conducts a final readiness meeting (T-2) to ensure window and Project readiness for execution.

**Lessons Learned Manager (SUP)**

- Conducts a lessons learned meeting with appropriate stakeholders after completion of specified windows.

**Table 1 – Execution Window & Segment 0 Window Milestones**

| Window Milestone (T- weeks) | | Window Milestone (OPG Project Managers are Owners for all Milestones) | Sub Owners | Requirements |
|---|---|---|---|---|
| **Open** | **Close** | | | |
| **-60** | **-52** | Long Lead Material Purchase Orders Issued<br>*(Segment 0 Window Milestone)* | Supply Chain | • All Segment 0 long lead materials (>6 month delivery) have purchase orders issued<br>• All material scheduled to be delivered no later than 3 months prior to the execution window start<br>• All purchase orders and target delivery dates have been recorded in the Parts Tracking Tool (PTT) for material, including those ordered through AS7 |
| **-52** | **-30** | Initial Assessing<br>*(Segment 0 Window Milestone)* | Operations Manager<br>Maintenance Manager<br>Supply Chain Manager<br>Engineering Manager<br>Maintenance Manager<br>Other Supporting Managers | • All vendor and OPG Work Order (WO) support tasks initial-assessed & set to minimum "Initial" in NR ATK<br>• Work orders are tasked out with resources, materials, and equipment identified with planning holds where required |
| **-27** | **-21** | EPC Project Outlines submitted<br>*(Segment 0 Window Milestone)* | Outage Manager | • EPC Project Outlines submitted to Station Work Control. Includes Level I and Station Resource Profile.<br>• Project P6 Schedules developed |
| **-27** | **-20** | Level 3 Schedule Acceptance<br>*(Segment 0 Window Milestone)* | Scheduling Manager | • Level 3 Schedules have been accepted |
| **-24** | **-19** | Commissioning Plans and all OPG Work plans issued for use | Operations Manager<br>Engineering Manager<br>Maintenance Manager | • Draft Work Plans to be submitted for review by T-24<br>• Commissioning Plans and all OPG Work plans issued for use<br>• Supporting documentation, which includes, Operations and Maintenance procedures, for all project work are available by the end of T-19. (TPARs identified as part of a Segment milestone)<br>• Modifications requiring updates to Technical Procedures have revisions issued for validation 2 weeks prior to the scheduled AFS |
| **-52** | **-16** | CWPs & ITPs issued for use | Operations Manager<br>Maintenance Manager<br>Supply Chain Manager<br>Engineering Manager<br>Maintenance Manager<br>Other Supporting Managers | • All associated ITPs, have been accepted by the TSSA<br>• CWP (or equivalent) Approved<br>• All vendor and OPG WO support tasks fully assessed & set to "Complete" in NR ATK (Operations assessing complete at T-13)<br>• Work Instructions have lessons learned incorporated from previous units.<br>• Any additional MRs raised during the final assessing stage are approved to be able to declare material readiness<br>• PC1s submitted to OPG Operations<br>• Project schedules are set to published, so they are visible on the refurb and station schedule<br>• Operations Turnover Plan approved or updated, as required (at T-20) |

| Window Milestone (T- weeks) | | Window Milestone (OPG Project Managers are Owners for all Milestones) | Sub Owners | Requirements |
|---|---|---|---|---|
| **Open** | **Close** | | | |
| **-16** | **-13** | Engineering Holds Removed | Engineering Manager | • Engineering non-parts holds are to be resolved by T-13 with the exception that Engineering will still receive 4 weeks to resolve any holds, if applied at T-16 or after |
| **-32** | **-10** | Project Window Readiness | Outage Manager | • Collaborative review of window readiness with Trades and OPG support group participation (as applicable)<br>• Verification of alignment of documentation, WO assessments, schedule logic, materials, tools, equipment, etc.<br>• Identify Material Risks and need for contingency strategy. This risk is to be input into RMO and communicated to the Parts Manager and the Outage Manager (Execution)<br>• Permits for work (e.g., building, environmental, etc.) prepared and approved, as required<br>• All special Tools, Equipment and Facilities listed out and verified available<br>• CMSP (formerly known as SATMs) required for work execution are approved |
| **-12** | **-08** | Schedule Freeze | Outage Manager | • Project execution schedule fully reviewed and verified<br>• Logic or schedule changes after this milestone must be approved by the Outage Manager (Execution) or delegate<br>• Actions from Project Window Readiness milestone completed or dispositioned, as applicable<br>• Vendor Lock-Out-Tag-Out (LOTOs) prepared for OPG Operations review<br>• PC1's reviewed by Operations (T-13) and permits preparation begins |
| **-16** | **-07** | Materials Released for Installation | Supply Chain Manager | • All materials receipt inspected<br>• Any Required CATIDs Request issued to PE to set to ready |
| **-16** | **-06** | Holds Removed | Engineering Manager | • All AS7 holds removed<br>• Resolve PE/BMU holds by T-12 |
| **-07** | **-05** | Materials Staged | Supply Chain Manager | • Materials staged for execution<br>• PB Materials staged in the East Warehouse (or equivalent) by ITP<br>• TSSA has released PB material |
| **-08** | **-04** | Work Protection Checked | Operations Manager | • All permits checked and ready for review<br>• LOTOs approved (prepared at T-08) |
| **-08** | **-02** | Final Readiness | Construction Manager | • Walkdowns of the work site conducted (at T-3)<br>• Construction challenge meeting held and actions complete, as required (at T-2)<br>• Complete Reactor Safety reviews (T-1) |
| **AFS+00** | **AFS+08** | Lessons Learned | Lessons Learned Manager (SUP) | • Post-window lessons learned meeting held with representatives from each of the execution groups, as required |