ONTARIO POWER GENERATION

Report

OPG Proprietary	
Document Number: **NK054-PLAN-01210-00004**	Usage Classification: **N/A**
Sheet Number: **N/A**	Revision: **R001**

Title:

DARLINGTON NEW NUCLEAR PROJECT POWER REACTOR SITE PREPARATION LICENCE RENEWAL PLAN

Darlington New Nuclear Project
Power Reactor Site Preparation Licence
Renewal Plan

NK054-PLAN-01210-00004-R001

2019-10-07

Project ID: 10-27601

OPG Proprietary

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Revision Summary

Revision Number	Date	Comments
R000	2019-06-30	Initial issue.
R001	2019-10-07	Revised the following to address CNSC comments (see NK054-CORR-00531-10507): • Figure 1 revised to clarify Appendices referred to are REGDOC 1.1.1 appendices. • Various sections to minimize the use of unnecessary adjectives “appropriate” and “adequate”. • Removal of “significant changes” wording throughout. • Section 4.2.1.2 – clarified the treatment of guidance. • Sections 4.2.1.3, 4.2.2 and 4.2.3.1 - Clarified wording on possible outcomes of assessment of changes. • Section 4.3.4 clarified and presented approach to Aggregate Assessment process in a more logical manner. • Table A-1 to add NBCC and disposition.

1.0 GENERAL

1.1 Background

Ontario Power Generation Inc. (OPG) currently maintains a Power Reactor Site Preparation Licence (PRSL) 18.00/2022 for the Darlington New Nuclear Project (DNNP) [R-1]. The site is located in the Municipality of Clarington, in the Region of Durham, approximately 70km east of the city of Toronto.

The PRSL allows OPG to conduct Site Preparation activities for the future construction and operation of a new nuclear generating station.

To fulfill OPG's application in 2009 for the above PRSL and support DNNP's environmental assessment (EA), OPG undertook extensive studies and thorough consultations to complete the site evaluation, assessments of effects of the environment on the project and assessment of effects of the project on the environment over the lifecycle of the DNNP facility. ([R-4], [R-5], [R-6], [R-12], [R-14] to [R-62])

The Joint Review Panel (JRP) conducted the EA review, public hearing and reached a decision on the EA in 2011. The JRP's EA Report concluded that the DNNP Project was not likely to cause significant adverse environmental effects, provided the mitigation measures proposed and commitments made by OPG during the review, and the JRP's recommendations, are implemented [R-2]. The Canadian Nuclear Safety Commission (CNSC) issued the PRSL to OPG in August 2012, following the EA decision. The PRSL expires on August 17, 2022; as such OPG is applying for its renewal [R-3].

1.2 DNNP Project Scope and Strategy for PRSL Renewal

To date, OPG has not initiated any licenced activities and has not selected a reactor technology. In December 2013, citing lower than planned power consumption growth combined with a strong supply situation, the Government of Ontario, through the 2013 Long-Term Energy Plan, directed OPG to defer the construction of new nuclear reactors at Darlington, however requested OPG maintain the PRSL granted by the CNSC.

Since 2013, OPG has continued to fulfill the requirements of the current PRSL. OPG has submitted DNNP annual reports to the CNSC [R-66] and a mid-term report in 2018 [R-67]. These reports provided the status and progress of the DNNP licensing activities and the commitments that OPG made during the JRP process as documented in the "Darlington New Nuclear Project Commitments Report", NK054-REP-01210-00078 [R-4]. The Commitments Report incorporated all of the JRP's recommendations as accepted by the Government of Canada as well as commitments made by OPG in the DNNP Environmental Impact Statement (EIS) and Licence to Prepare Site (LTPS) Application, and during the JRP public review process.

Additionally, OPG has continued to progress the long lead time commitments in accordance with the DNNP Commitments Report.

While the PRSL expires in August 2022, OPG is seeking an early renewal, one year ahead of its actual expiry date [R-3]. OPG has requested a licence term for the renewed DNNP PRSL starting from August 18, 2021. This approach will mitigate the risk of the PRSL expiring and preserve, for both OPG and our shareholder, the Province of Ontario, maximum flexibility for future nuclear generation at Darlington.

For this PRSL renewal, the project scope of DNNP as described in the NK054-CORR-00531-00035 “Application for a Licence to Prepare Site for Future Construction of OPG New Nuclear at Darlington” [R-5] remains unchanged.

For business planning purposes, OPG’s current basis for DNNP assumes the first reactor in operation by 2028 and other reactors to follow. This will shift the temporal framework for the facility life cycle compared to the assumptions used in submissions for the previous PRSL application. For the purposes of PRSL renewal activities, the following assumed timeline will be used:

Stage	Site Evaluation Assumptions [R-6]	Licence Renewal Activity Assumptions.
Site Preparation and Construction	2010-2025	2022 - 2037
Operation and Maintenance	2016-2100	2028 - 2112
Decommissioning	2100-2150	2112 – 2162

1.3 Purpose of Licence Renewal Plan

The purpose of the DNNP PRSL Renewal Plan is to describe the existing licensing basis for DNNP, the scope of licence renewal activities and the methodology to conduct those activities.

2.0 EXISTING DNNP LICENCE BASIS

Licensing basis is defined in CNSC REGDOC 3.5.3, Regulatory Fundamentals [R-7] as follows:

All licensees are required to conduct their activities in accordance with the licensing basis, which is defined as a set of requirements and documents for a regulated activity comprising the following:

(i) the regulatory requirements set out in the applicable laws and regulations

(ii) the conditions and safety and control measures described in the licence, and the documents directly referenced in that licence

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application.

The following demonstrates how this definition of Licensing Basis is applied for DNNP:

Item (i): The primary applicable Act and Regulations are the Nuclear Safety and Control Act and the Regulations made under this Act. Other Laws and Regulations applicable to the facility are listed on the CNSC website.

Item (ii): This item refers to licence conditions and documents directly referenced in PRSL and its associated Licence Conditions Handbook (LCH-PRSL-DNNP-R001 [R-8]). This includes Canadian Standards Association (CSA) and CNSC documents directly referenced in the above PRSL and LCH. The DNNP PRSL in effect at the time of the documentation freeze date (defined in Section 4.1.1.1 of this report) for this Licence Renewal Plan was PRSL 18.00/2022.

Item (iii): CNSC document INFO-0795 clarifies that documents needed to support the safety and control measures described in the licence application are those documents which demonstrate that (a) the applicant is qualified to carry out the licensed activities, and (b) appropriate provisions are in place to protect worker and public health and safety, to protect the environment, and to maintain national security and measures required to implement international obligations to which Canada has agreed.

Appendix C.1.3 of the LCH consists of a list of the key OPG documents that describe OPG's safety and control measures, taken from OPG's licence application for DNNP (NK054-CORR-00531-00035 [R-5]).

3.0 DNNP PRSL RENEWAL SCOPE

3.1 PRSL Renewal Objectives

The original application for the DNNP's PRSL was based on the CNSC RD-346 "Site Evaluation for Nuclear Power Plants" [R-10] which was replaced by REGDOC 1.1.1 Site Evaluation and Site Preparation for New Reactor Facilities" [R-9] in July 2018. The renewal application for the DNNP's PRSL will be assessed against REGDOC 1.1.1

The objectives of the DNNP PRSL renewal activities are to:

1. Determine the extent to which the overall DNNP licensing basis remains valid for the period following PRSL renewal. As the site evaluation information is a key input to the licensing process and licensing basis, the assessment activities will focus on the confirmation of the validity of the existing conclusions of the DNNP site evaluation. (e.g. address "Site Evaluation" aspects of REGDOC 1.1.1 [R-9])
2. Determine the adequacy and effectiveness of the programs in place to ensure Site Preparation activities as defined in the PRSL can be carried out in accordance with applicable requirements. (e.g. address "Site Preparation" aspects of REGDOC 1.1.1 [R-9]) The assessment is to be done in the context of changes in the site baseline data and current codes, standards and practices that were used or referenced in documents indicated in Section 2.0 "Existing DNNP Licence Basis."
3. Identify potential actions to be implemented to resolve any gaps identified as a result of PRSL renewal activities and timelines for their implementation.

4. Demonstrate compliance with licence conditions over the previous licence period.
5. Outline OPG's planned activities for the DNNP project in the renewed licence period.

By addressing both the Site Evaluation and Site Preparation aspects of REGDOC 1.1.1 [R-9] OPG will achieve the overall objective of the DNNP PRSL renewal application which is to ensure that there continues to be a valid licensing basis supporting the PRSL for DNNP.

3.2 Elements of DNNP PRSL Renewal

In order to achieve the objectives of the DNNP PRSL renewal, the work will be conducted in the following phases:

1. Preparing a PRSL Renewal Plan (this document)
2. Conducting of PRSL Renewal Plan activities
3. Consolidating and integrating the results of the PRSL Renewal activities to confirm the validity of the DNNP Site Evaluation and Licence Basis documents. (e.g. Aggregate Assessment Process)
4. Updating the DNNP Commitments Report to address any changes required in the existing commitments or addition of new commitments as required.

The above process is shown in Figure 1. DNNP PRSL Renewal Plan elements are further described in Sections 3.3-3.5. The process will culminate in the submission of the DNNP licence renewal application to the CNSC.

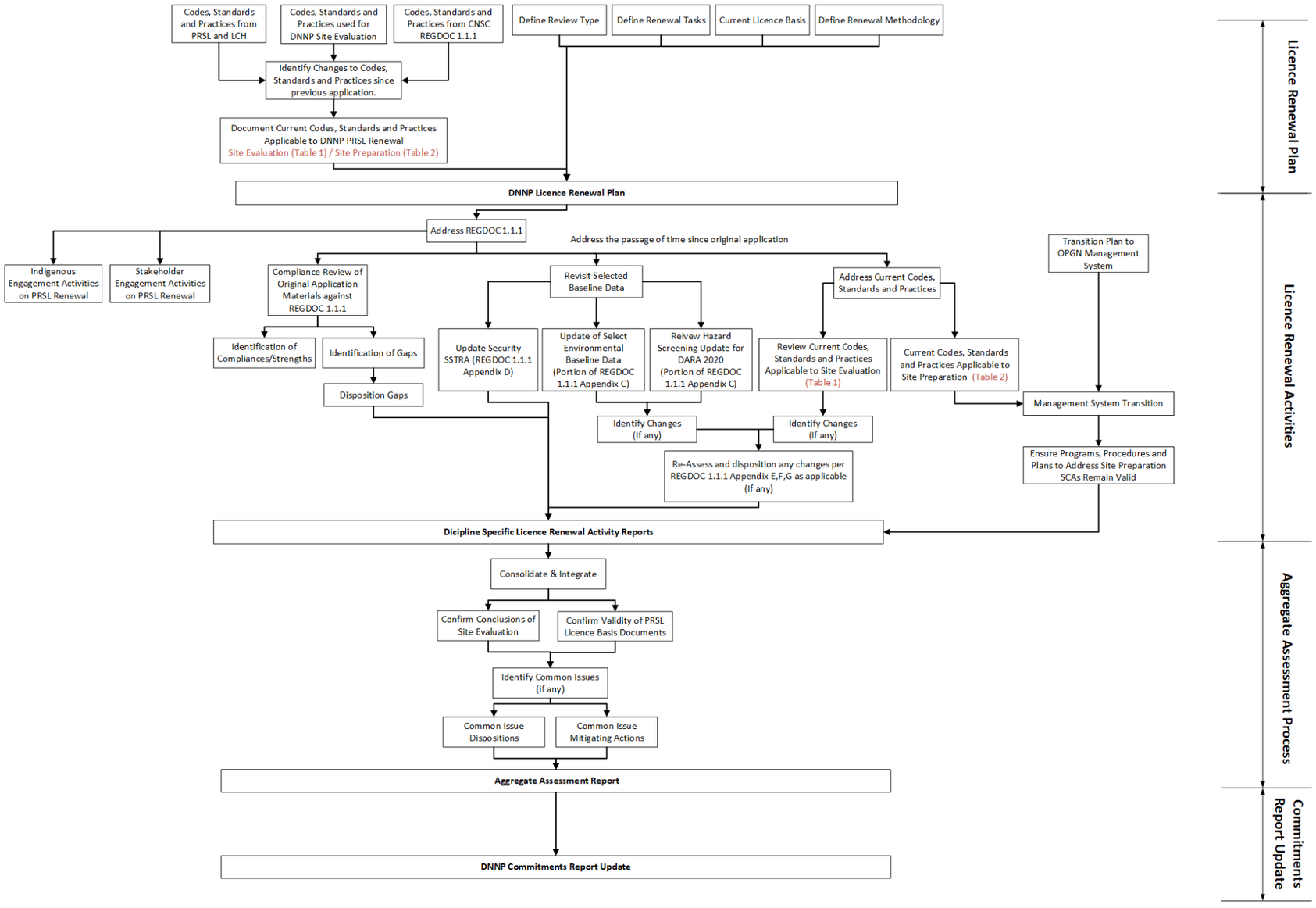

Figure 1: Licence Renewal Elements Flow Chart

3.3 Activities to Support DNNP PRSL Renewal Application

The assessment activities to support the DNNP PRSL renewal application include the following:

1. Addressing REGDOC 1.1.1 [R-9] requirements and guidance which includes: (See Section 3.3.1 for additional details)
    a. a review of original application materials against REGDOC 1.1.1 requirements and guidance and addressing any gaps that are identified.
    b. addressing the passage of time since the original application submission through:
        i. a review of current codes, standards and practices referenced in the Licensing Basis and those associated with REGDOC 1.1.1
        ii. updating or reviewing selected baseline data associated with the site.
2. Indigenous Engagement on PRSL Renewal (See Section 3.3.2 for additional details).
3. Public Engagement on PRSL Renewal (See Section 3.3.3 for additional details).
4. Review of Management System that governs Site Preparation activities (See Section 3.3.4 for additional details).

The results of these activities will be summarized in Licence Renewal Activity Reports. These reports will be used as the inputs to the aggregate assessment process.

3.3.1 Addressing REGDOC 1.1.1 Requirements and Guidance

In order to address the requirements and guidance of REGDOC 1.1.1 for PRSL renewal, OPG will conduct an Incremental clause by clause review (See Table 1 and Section 4.1.1.2 for review type description) of REGDOC 1.1.1 against DNNP PRSL License Basis documents from the original application ([R-4],[R-5],[R-6],[R-12],[R-14] to [R-62]). This review will identify where original application materials are compliant and where there are gaps that need to be addressed (see Section 4.2.1 for more details on methodology).

Additionally, OPG will address the passage of time since the original application by revisiting or updating key baseline information that forms the foundation of the site evaluation as well as review current codes, standards and practices as they apply to site evaluation and site preparation. The review will identify changes in baseline data or codes, standards and practices if any. If a change is identified this may trigger a re-assessment of likely project effects or an Adaptive Management Strategy will be implemented to address changes in accordance with the appropriate sections and appendices of REGDOC 1.1.1 and/or the DNNP Commitments Report.

3.3.2 PRSL Renewal Indigenous Engagement

OPG maintains a corporate Indigenous Relations Policy [R-11] to:

- Keep Indigenous communities proximate to our facilities informed of nuclear station operations, emerging projects and station environmental performance, and;
- Seek the input and perspectives of Indigenous community representatives about OPG's ongoing nuclear operations and projects, and address and resolve concerns raised, as applicable.

OPG will continue to engage in these activities on an ongoing basis, however, to satisfy Indigenous engagement requirements as outlined in REGDOC 1.1.1, OPG will undertake specific Indigenous engagement activities associated with the DNNP PRSL Renewal.

These activities will focus on Indigenous communities that have Aboriginal and treaty rights in the area where DNNP resides and those with interests in the project. Additional details will be provided in an Indigenous Engagement Plan to be developed and executed as part of the PRSL renewal activities.

3.3.3 PRSL Renewal Public Engagement

OPG has a robust and on-going communications and engagement program with the public and stakeholders in communities where our facilities are located, as well as with the broader general public. OPG keeps the public and stakeholders informed of station operations, emerging projects and environmental performance. Similar to Indigenous engagement, OPG will undertake specific public and stakeholder engagement activities associated with the DNNP PRSL Renewal.

Additional details will be provided in a DNNP Public information and Disclosure Plan to be developed and executed as part of the PRSL renewal activities.

3.3.4 Management System Review

The DNNP Management System [R-12] was developed to support the execution of site preparation activities and forms part of the existing Licence Basis for DNNP. To enhance efficiency and to maintain the harmonization of practices across OPG's nuclear fleet, it has been internally recommended [R-63] that OPG adopt the existing OPG Nuclear Management System [R-13] that is already N286-12 compliant going forward. OPG will transition the DNNP specific Management System to the OPG Nuclear Management system as part of licence renewal activities.

OPG will identify the subset of programs and procedures within the existing OPG Nuclear Management System that are applicable to site preparation activities.

In addition, as part of addressing current codes, standards and practices OPG will ensure that current codes, standards and practices that are associated with site preparation activities are addressed as part of the management system transition. This

will provide assurance that the Safety and Control Areas (SCAs), as well as other matters of regulatory interest as described in Section 4.0 of REGDOC 1.1.1, have or are planned to have adequate programs and procedures in place to control the extent of licensed activities anticipated in the next licensing period.

The transition to the OPG Nuclear Management System will be conducted in a manner consistent with Clause 1.3 of the LCH.[R-8]

3.4 Aggregate Assessment Process

The objective of the Aggregate Assessment Process is to provide an overall assessment to confirm the validity of the existing licensing basis for the next licensing period or identify Mitigating Actions that will be carried forward to the DNNP Commitments Report [R-4] to be tracked to resolution.

In the Aggregate Assessment Process, dispositions of gaps identified in the REGDOC 1.1.1 compliance review and changes identified from the codes, standards and practices review and baseline data updates will be consolidated and assessed. This work will confirm the conclusions of the Site Evaluation work and the validity of other Licence Basis documents. Common Issues will be identified and dispositions or Mitigating Actions will be proposed.

3.5 Commitments Report Update

The proposed Mitigating Actions resulting from the Aggregate Assessment will be documented in an update to the DNNP Commitments Report [R-4]. This could be in the form of new commitments to be completed prior to a future phase of the project or revisions to an existing commitment to capture additional or revised requirements.

4.0 METHODOLOGY

4.1 Methodologies Associated with PRSL Renewal Plan

4.1.1 Identification of Applicable Current Codes, Standards and Practices

One of the objectives of the PRSL Renewal Plan is to identify and document current codes, standards and practices that would apply to DNNP PRSL Renewal Activities.

The identification process of applicable current codes, standards and practices relied on the following sources to create a starting point:

1. The primary sources are the current versions of codes, standards and practices that form part of the existing DNNP Licensing Basis which are extracted from the PRSL [R-1], LCH [R-8] as well as any supporting licence basis documents such as the site evaluation work ([R-4],[R-5],[R-6],[R-12],[R-14] to [R-62]). This source list is presented in Table A-1.

2. OPG systematically identified those codes, standards and practices called for in REGDOC 1.1.1 [R-9] as well as a review of the current CNSC regulatory framework documents. These are listed in Tables A-2 and A-3 respectively.

A freeze date was selected as described in Section 4.1.1.1 to establish a set of current codes, standards and practices that forms part of the DNNP PRSL Renewal basis and against which the existing licence basis codes, standards and practices for DNNP will be assessed.

The list of codes, standards and practices was further broken down into those that are applicable to Site Evaluation (i.e. Section 3.0 of REGDOC 1.1.1 inclusive of associated appendices), those applicable to Site Preparation (i.e. Section 4.0 of REGDOC 1.1.1) and those that may contain requirements and guidance applicable to both Site Evaluation and Site Preparation. This will assist in the determination of the nature of the review necessary as part of PRSL Renewal Activities as further described in Section 4.2.3.

The following criteria were applied to down select codes, standards and practices from the source lists (i.e. Tables A-1, A-2 and A-3):

- Codes, standards and practices that were utilized in the development of the original DNNP licence application, form part of the existing licence basis and remain unchanged as of the freeze date were screened out.
- CNSC Policy documents are excluded since they are for internal CNSC application.
- IAEA codes, standards and practices generally will not form part of the review since applicable portions will have been incorporated in the development of the various regulatory documents listed by the CNSC as being current. However if an IAEA code, standard or practice is cited within the PRSL, LCH or a CNSC Regulatory Document applicable to Site Evaluation or Site Preparation activities or forms part of the existing Licence Basis (see Table A-1) then it will be considered for review.
- US-NRC, EPRI and other codes, standards and practices are not part of the review unless cited as mandatory within the PRSL, LCH or a CNSC Regulatory Document applicable to Site Evaluation or Site Preparation activities or forms part of the existing Licence Basis (see Table A-1).
- Where a document has a new number/type but addresses the same topic from the same organization, the document will be treated as a revision (e.g., if a REGDOC replaces a CNSC G or RD document).
- Informative / Non-mandatory sections or appendices of documents will not form part of the review basis.

Tables 1 and 2 provide the final list of codes, standards and practices subject to review as part of PRSL Renewal Activities. These tables also identify the type of review that is to be conducted which is further defined in Section 4.1.1.2. In summary, the tables associated with the identification and selection of applicable codes, standards and practices are as follows:

Table #	Title	Description
Table 1	List of Codes, Standards and Practices Applicable to Site Evaluation Identified for Review	Final listing of codes, standards and practices applicable to Site Evaluation activities selected for review as part of PRSL Renewal down-selected from Tables A-1, A-2 and A-3 based on criteria defined above.
Table 2	List of Codes, Standards and Practices Applicable to Site Preparation for Addressing in Management System	Listing of codes, standards and practices applicable to Site Preparation activities to be addressed as part of the Management System transition for PRSL Renewal down-selected from Tables A-1, A-2 and A-3 based on criteria defined above.
Table A-1	List of Licence Basis Codes, Standards and Practices and Current Equivalents	List of existing DNNP Licensing Basis codes, standards and practices which are extracted from the PRSL, LCH as well as supporting licence basis documents such as the site evaluation work.
Table A-2	Codes, Standards and Practices Referenced in REGDOC 1.1.1.	Systematic listing of codes, standards and practices called for in REGDOC 1.1.1.
Table A-3	List of Current CNSC Regulatory Framework Documents (As of Freeze Date, see 4.1.1.1)	Review of the current CNSC regulatory framework documents.

4.1.1.1 Freeze Date for Applicable Current Codes, Standards and Practices

The editions or versions of applicable modern codes, standards and practices identified in Section 4.1.1 that are in effect on or before December 31, 2018 will be included in the review.

4.1.1.2 Definition of Review Types for Current Codes, Standards and Practices

OPG established two types of reviews for current codes, standards and practices:

1. ***Clause by Clause Review***: An assessment conducted against individual clauses of a current code, standard or practice to demonstrate with supporting evidence whether requirements or guidance identified in the clause are met.
2. ***High Level Review***: An assessment conducted to establish the degree of conformance to the intent of a clause or groups of clauses of a current code, standard or practice.

Codes, standards and practices that are part of the existing licensing basis and have been revised or updated since the time of the original application are subject to an ***Incremental*** Clause by Clause or High Level Review. That is, only the differences between the two documents are subject to review.

4.1.1.3 Selection of Review Type

The following information was used to select the review type applicable to each current code, standard or practice listed in Tables 1 and 2.

Documents Subject to Clause by Clause Review: are current versions of codes, standards and practices that shall apply to a modern facility, including industry

requirement documents referenced as mandatory in applicable CNSC Regulatory Documents.

Documents Subject to High Level Review: are the remaining codes, standards and practices identified for inclusion in the Licence Renewal Plan for review. (i.e. those documents that don't meet the requirement for Clause by Clause review)

It should be noted that whether a code, standard or practice is selected for clause by clause or high level review, the extent of review will be limited to only the sections that pertain to site evaluation or site preparation.

In general, if a document was deemed to meet the threshold for review and it was called out in REGDOC 1.1.1 as a "shall" then Clause by Clause was selected, if it was only called out as "guidance or consider for information" then High Level was selected.

In the process of selecting the review type (particularly documents sourced from Tables A-2 and A-3) some judgement was applied on a case-by-case basis considering other factors such as:

- degree of applicability to the DNNP site, project and planned activities,
- context in which the document is referenced in REGDOC 1.1.1,
- degree to which the referenced document is encompassed by a CNSC REGDOC and/or CSA Standard already selected for review.

Incremental review was applied where an earlier version of the document was previously considered as part of the existing DNNP Licence Basis.

Again, Incremental Review is either a clause by clause or high level review per the categorization above but only applied to the changes between two documents where a previous version was considered during the previous PRSL application.

The selected level of review for each document has been identified in Tables 1 and 2 based on this approach.

4.2 Methodologies Associated with PRSL Renewal Activities

4.2.1 REGDOC 1.1.1 Compliance Review

The compliance review of DNNP Licence Basis documents against REGDOC 1.1.1 will be conducted as an ***Incremental Clause by Clause Review***. The review will be conducted in several phases:

Phase 1: Review of REGDOC 1.1.1 [R-9] against RD-346 [R-10] to identify new or changed requirements and/or guidance.

Phase 2: Review of DNNP Licence Basis documents against new or changed REGDOC 1.1.1 requirements to identify compliance or any potential gaps for further assessment:

Phase 3: Disposition of potential gaps and/or confirmation of gaps warranting further action.

4.2.1.1 Identification of New or Changed Requirements or Guidance

REGDOC 1.1.1 [R-9] will be reviewed clause by clause against RD-346 [R-10] with the intention of identifying the differences introduced in REGDOC-1.1.1 which supersede RD-346. For each REGDOC-1.1.1 clause, the text and context will be assessed against RD-346 clauses to determine the scope of the revision. Based on the findings an assessment category defined below will be selected for each clause:

- **No Change:** Phrasing is verbatim to an equivalent RD-346 clause and does not introduce additional requirements/guidance.
- **Intent Consistent:** Phrasing is not verbatim to equivalent RD-346 clause but does not modify the original intent.
- **Intent Modified:** Phrasing has changed and the intent of the equivalent RD-346 clause has been modified.
- **New Requirement:** REGDOC-1.1.1 requirement clause was not addressed in RD-346.
- **New Guidance:** REGDOC-1.1.1 guidance clause was not addressed in RD-346.
- **Informative:** REGDOC-1.1.1 paragraph does not contain requirements or guidance and is provided for background information only.

4.2.1.2 Assessment of Existing Licence Basis Documents Against New Requirements and Guidance in REGDOC 1.1.1

A review of DNNP Licence Basis documents against new or changed REGDOC 1.1.1 requirement clauses falling into categories “Intent Modified” or “New Requirement” (as described in Section 4.2.1.1) will be conducted to identify where existing DNNP submissions can be credited to demonstrate compliance or any potential gaps for further assessment.

One of the following compliance categories will be assigned based on information available in the DNNP Licence Basis documents:

- **Compliant:** Submission documents provide information specifically demonstrating compliance with the requirements.
- **Indirect Compliant:** Submission documents provide information that meets the intent of the requirements.
- **Potential Gap:** Submission documents do not provide information that meets the intent of the requirements.

Discussion and associated references will be provided to justify the assigned compliance category. Potential Gaps will be carried forward for further assessment in the next phase of work.

In addition to the review of REGDOC 1.1.1 requirements, a review and assessment of DNNP Licence Basis documents against REGDOC 1.1.1 guidance clauses falling into the “Intent Modified” and “New Guidance” categories (as described in Section 4.2.1.1) will be conducted.

The review of guidance will be aligned with REGDOC 1.1.1 expectations to review and consider guidance.

Discussion and associated references will be provided to support the review and assessment of guidance. Any findings associated with the review and assessment of guidance will be carried forward for further assessment in the next phase of work.

4.2.1.3 Addressing Potential Gaps within REGDOC 1.1.1

Potential gaps will be reviewed to determine their potential impacts to the conclusions of the Site Evaluation and/or Site Preparation when considering the proposed mitigation plans that are currently planned or in place.

Gaps could also be dispositioned as “Not Applicable” to DNNP as some requirements or guidance in REGDOC 1.1.1 may not apply in the context of the DNNP site.

The potential gaps will be assessed in a risk-informed manner and their impacts will be classified into the following categories:

- Change of the environmental impact conclusion of the project when considering the proposed mitigation measures that are currently planned or currently captured in the DNNP Commitments Report. Mitigating measures would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Some level of further assessment is needed to confirm the change in environmental impact conclusion of the project. This assessment would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Change in the impact of the environment on the design and construction of the proposed project. This impact would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Gaps not affecting the conclusions of the Site Evaluation and/or Site Preparation after mitigations currently proposed in the DNNP Commitments Report are considered.

Documentation of the results of the above process will be within Licence Renewal Activity Reports. This information will be fed into the Aggregate Assessment Process.

4.2.2 Update Site Baseline Data

A key part of the PRSL Renewal Activities will be examining any changes that may have occurred in site baseline data since the original application and determining whether the changes should trigger a reassessment of project effects. The updated baseline data will be used to confirm the existing conclusions of the site evaluation.

Where it is required and practicable, the 2019 site baseline data update for the DNNP will be conducted in accordance with Appendix C of REGDOC 1.1.1, Appendix D for security related baseline data and today's current codes, standards and practices.

The following will be the three key elements of the Baseline Data update:

1) Update of Baseline Data will include an update to the DNNP Site Selection and Threat Risk Assessment (SSTRA) [R-60] in accordance with Appendix D of REGDOC 1.1.1.
2) OPG will also leverage updated Hazard Screening work that is underway to support the 2020 Probabilistic Safety Assessment (PSA) update for the existing Darlington station with a focus on the external hazards. In many cases, the external hazards for the Darlington Station will be identical for DNNP. To support the PSA update work the latest Hazard Screening information applicable to the existing Darlington Station [R-64] will be updated. This updated information will be reviewed against applicable Site Evaluation documents to determine DNNP Site Evaluation [R-17] to [R-26]) remains valid given the latest available information on external hazards.
3) Although OPG is not required to conduct a periodic Environmental Risk Assessment (ERA) as per the DNNP PRSL [R-1] and LCH [R-8], OPG will update select environmental data for the site consistent with previous Environmental Risk Assessment (ERA) campaigns for the Darlington Nuclear site [R-65]. This will be augmented with sampling of some parameters associated with important environmental commitments in the DNNP Commitments Report [R-4]. As a result the ERA process will be leveraged to supply baseline environmental data to support the licence renewal but a formal updated ERA will not be submitted as part of DNNP PRSL Renewal deliverables.

Once the updated baseline data is obtained it will be reviewed to identify any changes in information compared to the data utilized in the original application. Changes will be assessed to determine their potential impacts to the conclusions of the Site Evaluation and/or Site Preparation when considering the proposed mitigation plans that are currently planned or in place. The baseline changes will be assessed in a risk-informed manner and their impacts will be classified into the following categories:

- Change of the environmental impact conclusion of the project when considering the proposed mitigation measures that are currently planned or currently captured in the DNNP Commitments Report. Mitigating measures would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.

- Some level of further assessment is needed to confirm the change in environmental impact conclusion of the project. This assessment would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Change in the impact of the environment on the design and construction of the proposed project. This impact would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Gaps not affecting the conclusions of the Site Evaluation and/or Site Preparation after mitigations currently proposed in the DNNP Commitments Report are considered.

Documentation of updated baseline data, significance assessment and any re-assessment of likely effects will be documented within Licence Renewal Activity Reports. This information will be fed into the Aggregate Assessment Process.

4.2.3 Review of Current Codes, Standards and Practices

The other half of addressing changes since the original application is addressing any new or updated codes, standards and practices that apply to Site Evaluation work or future Site Preparation work.

In this PRSL Renewal Plan, OPG has defined the codes, standards and practices (see Table A-1) that form the existing licence basis for DNNP Site Preparation phase and new (Table A-2 and Table A-3) and changed (Table A-1) codes, standards and practices that might apply to the DNNP Site Evaluation and Site Preparation phases of the project. The conditions on which codes, standards and practices are carried forward for review, as well as the review level, are also defined in Sections 4.1.1.2 and 4.1.1.3.

It is important to highlight the differences in the nature of the review of codes, standards and practices that apply to Site Evaluation and those that apply to the Site Preparation activities.

For those codes, standards and practices applying to Site Evaluation the review is mainly retrospective. The Site Evaluation was conducted and submitted as part of the original DNNP PRSL application [R-5]. The objective of PRSL renewal is to confirm the validity of this previous work. Therefore the review of current codes, standards and practices as applicable to Site Evaluation (See Table 1) is to determine the degree of conformance of this previous work to the latest requirements, practices and methodologies described.

For those codes, standards and practices applying to Site Preparation the review is forward looking, since no Site Preparation activities have taken place to date. The review is looking at the degree of conformance of OPG's Management System, which describes the programs, procedures, practices and plans that will inform the future conduct of Site Preparation activities.

For this reason, the list of codes, standards and practices was split into those applying to Site Evaluation (Table 1) and Site Preparation (Table 2).

4.2.3.1 Codes, Standards and Practices Applicable to Site Evaluation

For codes, standards and practices applicable to Site Evaluation the review will be conducted in a manner consistent with the compliance review of REGDOC 1.1.1 and a compliance category will be established in accordance with Section 4.2.1.2 for the various clauses or groups of clauses depending on whether it is a clause by clause or high level review.

The potential gaps will be assessed in a risk-informed manner and their impacts will be classified into the following categories:

- Change of the environmental impact conclusion of the project when considering the proposed mitigation measures that are currently planned or currently captured in the DNNP Commitments Report. Mitigating measures would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Some level of further assessment is needed to confirm the change in environmental impact conclusion of the project. This assessment would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Change in the impact of the environment on the design and construction of the proposed project. This impact would be addressed through updates to existing commitments or new commitments in the DNNP Commitments Report.
- Gaps not affecting the conclusions of the Site Evaluation and/or Site Preparation after mitigations currently proposed in the DNNP Commitments Report are considered.

For codes, standards and practices applicable to Site Evaluation the documentation of the review, significance assessment and any re-assessment of likely effects will be documented within Licence Renewal Activity Reports. This information will be fed into the Aggregate Assessment Process.

4.2.3.2 Codes, Standards and Practices Applicable to Site Preparation

As described above the objective of addressing the codes, standards and practices applicable to Site Preparation is to determine the level of compliance of programs, procedures and plans that make up the Management System which to support the future Site Preparation activities against those documents. The review will be documented as part of the DNNP Management System transition from the existing DNNP specific Management System to the elements of the overall OPG Nuclear Management System.

For those codes, standards and practices applying to Site Preparation the following caveats are provided to guide the review:

- OPG conducts regular reviews of new and revised codes and standards for the OPG nuclear operating fleet. This ongoing process is part of OPG's maintenance of its operating licenses. As a result, since 2009 when the site

evaluation and the PRSL application were completed, many of the updated codes, standards and practices issued already have gap assessments completed to varying degrees of detail for their application to the overall nuclear fleet. OPG will leverage these reviews for codes, standards and practices applicable to Site Preparation.

- Where a code, standard or practice is programmatic in nature, as a practical approach and to maintain harmonization of practices across OPG's nuclear fleet, OPG seeks to maintain compliance with the editions, versions or agreed implementation dates of the applicable current codes, standards and practices that are specified in the current Darlington Power Reactor Operating Licence (PROL) and associated LCH.
- Where the Darlington PROL or LCH lists a version of a current code, standard or practice that is not the most current as of the freeze date identified in 4.1.1.1 then OPG would provide rationale and justification for DNNP to use the same version. Where the Darlington PROL or LCH does not list a code, standard or practice that was deemed applicable to DNNP Site Preparation activities in Table 2, then OPG will ensure that the current version is addressed in elements of OPGN Management System selected for DNNP Site Preparation as part of Management System transition. In some cases, OPG may choose to propose a future implementation date for a more current edition of a code, standard or practice that can be supported by the broader fleet if required.

4.2.4 Licence Renewal Activity Reports

The results of the REGDOC 1.1.1 Compliance Review (Section 4.2.1), updated baseline data (Section 4.2.2) and review of current codes, standards and practices applicable to Site Evaluation (Section 4.2.3) will be documented in Licence Renewal Activity Reports and submitted to CNSC staff for review. The content of these reports should include:

- The scope of the specific review.
- Applicable review elements, site baseline data and applicable codes and standards.
- Review methodology.
- Assessment of compliance with review tasks defined in this PRSL Renewal Plan.
- Review of findings (compliances and potential gaps).
- Identification of changes
- Disposition of potential gaps or re-assessment of likely effects as required.
- Impacts on other discipline specific reviews.
- Overall assessment and conclusions.

The Licence Renewal Activity Reports will be the main source of information for the Aggregate Assessment Process.

4.3 Methodologies Associated with the Aggregate Assessment Process

The objective of the Aggregate Assessment Process is to provide an overall assessment to confirm the existing licensing basis remains valid for the next licensing period or identify Mitigating Actions that will be carried forward to the DNNP Commitments Report [R-4] to be tracked to resolution.

The Aggregate Assessment Process consists of:

1) Identification and consolidation of compliances and gaps, if any, from all Licence Renewal Activity Reports.
2) Assessment of existing Licence Basis Documents including Site Evaluation documents against information provided in Licence Renewal Activity Reports.
3) Identification of potential overall issues.
4) Development of resolutions / dispositions of potential overall issues, where required.
5) Where applicable, potential overall issues will be recommended for incorporation into the DNNP Commitments Report as new or revised commitments.
6) Preparation of the Aggregate Assessment Report to document and summarize the aggregate assessment.

4.3.1 Identification and Consolidation of Compliances and Gaps from the Licence Renewal Activity Reports

The Compliances and Gaps from the Licence Renewal Activity Reports will be consolidated and grouped by Review Topic Area (See Tables 3 and 4) to support the Aggregate Assessment Review. Results from the Management System transition work will also be considered.

4.3.2 Assessment of Existing Licence Basis Including Site Evaluation Conclusions

OPG completed the existing Site Evaluation ([R-17] to [R-26]) in 2009 to ensure that a new nuclear power plant constructed at the DNNP site will not create an unreasonable risk to the public or the environment. The existing overall conclusion is that the DNNP site is suitable for a new nuclear power plant.

In the Site Evaluation work all areas of potential hazards, identified in the original application including:

- Meteorological events,
- Flooding hazards,

- Seismic hazards,
- Geotechnical hazards,
- External, human induced hazards,
- Hazards related to site characteristics and its influence on potential dispersion of radioactive materials,

were assessed and the specific risks to the public and the environment, associated with these hazards, that would be posed by the new NPP on the DNNP site were evaluated. The evaluations were performed by comparing the values of assessed parameters with the corresponding values in the PPE [R-30] and the evaluation therefore applies any reactor designs that fit within this envelope.

DNNP site existing conditions in terms of geography, hydrology, seismology, meteorology, geology, geotechnical conditions and hydrogeology formed the baseline conditions for the site. The baseline conditions considered included state at the DNNP site at that time, as well as predicted changes to the site during the projected life of the new NPP.

This baseline data would be used in conjunction with conditions identified through hazard screening of both potential external naturally occurring hazards and external human induced events to perform an assessment of against defined safety goals for the proposed nuclear power plant.

This information also helped inform the Environmental Impact Statement [R-31] which evaluated the impact of the project on the Environment.

OPG's PRSL application submission was evaluated against Topic Review Areas identified in Tables 3 and 4 for Site Evaluation and Site Preparation elements respectively. Tables 3 and 4 also show the applicability of the topic areas to REGDOC 1.1.1 as well as key submission documents associated with each Topic Review Area.

The assessment to determine that the existing Licence Basis for DNNP remains valid will utilize the new information gathered through the Licence Renewal Activity Reports and review this information against the submission documents associated with each Topic Review Area identified in Tables 3 and 4 to confirm the conclusions reached in the various submissions.

Additionally, open OPG commitments previously made during the JRP process, as documented in the latest edition of NK054-REP-01210-00078 "Darlington New Nuclear Project Commitments Report" will also be considered. It should be noted that OPG commitments listed in the above report include commitments made as part of the Environmental Impact Statement, the Licence to Prepare Site Application, related OPG correspondences, applications with other regulatory bodies and the subsequent JRP public review process including the Government of Canada's response to the JRP.

4.3.3 Identification of Common Issues

Changes resulting from the updated baseline data and/or the review of current codes, standards and practices from all Licence Renewal Activity Reports will be assembled into Common Issue(s) associated with a Topic Review Area.

4.3.4 Addressing Common Issues

Common Issues identified in the Aggregate Assessment Report will be evaluated and prioritized to determine an appropriate resolution/disposition. The following paragraphs describe a high level approach to allow for flexible evaluation of a wide range of potential Common Issues driven by changes in DNNP Licence Basis information. Additional specific details would be provided within the Aggregate Assessment Report.

Evaluation and Prioritization:

Common Issues Identified in the Aggregate Assessment Report will be evaluated and prioritized with respect to their importance to Nuclear Safety. This evaluation and prioritization will be based on engineering judgement while considering the “Impact”, “Urgency” and “Value” of a Common Issue as described below:

- Impact: the source of the Common Issue and degree to which it changes or impacts one or more of the following considerations for the evaluation of site suitability (including consideration of the life cycle of the facility) as compared to the currently documented licensing basis of the facility:
    - conclusions with respect to the predicted effects of the project on the environment.
    - effects of the environment on the project which informs the facility design.
    - the quality and adequacy of baseline data as it relates to the ability to perform future environmental monitoring of project activities.
- Urgency: the timing for a Common Issue to be resolved, either immediately or in subsequent licensing phases of the project, such as at the design stage or the robustness of the facility design to be able to adapt over the expected lifecycle will also be considered.
- Value: Extent practicable of the possible mitigating actions in terms of cost, resources and time; and safety benefits achieved by those actions in relation to the overall “Impact” and “Urgency” described above.

Resolution/Disposition of Common Issues:

Common Issues of low overall importance may be dispositioned as “Acceptable Deviations”. If Common Issues cannot be dispositioned as an “Acceptable Deviation” then Mitigating Action(s) will be proposed.

Mitigating Actions will consist of the step(s) to be taken to bring their respective common issue to an acceptable resolution, either as part of the PRSL Renewal Process or as new or revised actions in the DNNP Commitments Report for resolution at a future stage of the licensing process.

For any particular Common Issue an alternate process / resolution may be utilized in consideration of feedback from the senior management team through the Aggregate Assessment review process.

4.3.5 Aggregate Assessment Report

The results of the Aggregate Assessment Process will be documented in an Aggregate Assessment Report, presenting the results of the assessment against the existing Licence Basis for DNNP, and documenting the conclusions, Common Issues, and Mitigating Actions to be considered.

The Aggregate Assessment Report will include a ranked list of those Common Issues, the rationale for the ranking, and identified dispositions or recommended Mitigating Actions to be carried forward to the DNNP Commitments Report.

The Aggregate Assessment Report will include a statement of OPG's assessment of the overall acceptability of the existing Licence Basis for DNNP. The approval of the report will be conducted as required under the OPG Nuclear Management System. The aggregated assessment report will be submitted to CNSC staff for review.

4.4 Commitments Report Update

The new or changed commitments resulting from the Aggregate Assessment Process will be captured in an update to the DNNP Commitments Report [R-4]. In accordance with the format that is described in the Commitments Report, the phase of the project by which the commitment is required to be implemented will be identified. The tracking and reporting of implementation, as well as change management, will continue to be conducted as per established processes described in the DNNP Commitments Report, which includes annual progress reporting through the DNNP Annual Report [R-66].

The updated Commitments Report will be a component of OPG's PRSL renewal application.

5.0 REVIEW GOVERNANCE

5.1 Quality Management

OPG will apply, where appropriate, existing OPG Nuclear quality management programs (compliant with CSA N286-12) to this assessment. Where external contractors are engaged, they will either work under OPG's quality program or under a quality program that has been accepted by OPG as meeting the quality requirements for the contracted scope of work.

Consistent with OPG's management system, OPG will ensure the contractors have appropriate qualifications and experience to conduct the assessment work. OPG will review and accept the contracted deliverables for OPG use.

5.2 Schedule

The key target dates for completion and submission to the CNSC of deliverables for the DNNP SPL renewal are:

Items	Date
DNNP PRSL Renewal Plan Document	June 2019
Licence Renewal Activity Reports	October 2019 - May 2020
Aggregate Assessment Report	June 2020
Updated DNNP Commitments Report	August 2020
DNNP PRSL Renewal Application	August 2020

6.0 ACRONYMS

CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
DNNP	Darlington New Nuclear Project
EA	Environmental Assessment
EPRI	Electric Power Research Institute
ERA	Environmental Risk Assessment
IAEA	International Atomic Energy Agency
JRP	Joint Review Panel
LCH	Licence Conditions Handbook
OPG	Ontario Power Generation
PROL	Power Reactor Operating Licence
PRSL	Power Reactor Site Preparation Licence
US - NRC	United States – Nuclear Regulatory Commission

7.0 REFERENCES

[R-1] PRSL-18.00/2022, *Nuclear Power Reactor Site Preparation Licence – OPG New Nuclear at Darlington Generating Station*, August 2012.

[R-2] NK054-REP-00531-10001, *Joint Review Panel Environmental Assessment Report*, August 2011.

[R-3] NK054-CORR-00531-10493, *DNNP – Notice of Intent for Early Renewal of Power Reactor Site Preparation Licence PRSL 18.00/2022*, April 2019.

[R-4] NK054-REP-01210-00078 R003, *Darlington New Nuclear Project Commitments Report*, July 2019.

[R-5] NK054-CORR-00531-00035, *OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site*, September 2009.

[R-6] NK054-REP-07730-00023, *Scope of Project for EA Purposes Technical Support Document New Nuclear – Darlington Environmental Assessment*, September 2009.

[R-7] REGDOC 3.5.3, *Regulatory Fundamentals*, August 2018.

[R-8] LCH-PRSL-DNNP R001, *OPG New Nuclear at Darlington Generating Station Nuclear Power Reactor Site Preparation Licence PRSL 18.00/2022*, August 2012.

[R-9] REGDOC 1.1.1, *Site Evaluation and Site Preparation for New Reactor Facilities*, July 2018.

[R-10] RD-346, *Site Evaluation for New Nuclear Power Plants*, November 2008.

[R-11] OPG-POL-0027 R005, *Indigenous Relations Policy*, March 2017.

[R-12] NK054-CHAR-0001 R006, *DNNP Management System*, April 2012.

[R-13] N-CHAR-AS-0002 R019, *Nuclear Management System*, November 2016.

[R-14] NK054-CORR-00531-00037, *Submission of Environmental Assessment Materials.*

[R-15] NK054-REP-01210-00008 R001, *Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations*.

[R-16] NK054-REP-01210-00009, *Site Boundary Considerations for New Nuclear – Darlington.*

[R-17] NK054-REP-01210-00010 R001, *Summary Report: Site Evaluation Studies for Nuclear Installations at Darlington External Human Induced Events.*

[R-18] NK054-REP-01210-00011 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Part 6 Evaluation of Geotechnical aspects.*

[R-19] NK054-REP-01210-00012 R002, *Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment.*

[R-20] NK054-REP-01210-00013 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Part 4: Evaluation of Meteorological events.*

[R-21] NK054-REP-01210-00014 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Probabilistic Seismic Hazard.*

[R-22] NK054-REP-01210-00015 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Part 3: Summary of Seismic Hazard Evaluations.*

[R-23] NK054-REP-01210-00016 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water.*

[R-24] NK054-REP-01210-00017 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Part 1 External Human Induced Events.*

[R-25] NK054-REP-01210-00018 R001, *Site Evaluation of the OPG New Nuclear at Darlington- Additional Considerations.*

[R-26] NK054-REP-01210-00020 R001, *Evaluation of Differences Between the Environmental Assessment and Site Evaluation Studies for the OPG New Nuclear at Darlington.*

[R-27] NK054-REP-03490-00001, *Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington.*

[R-28] NK054-01210-00003, *Exclusion Zone Determination for Darlington New Nuclear Project.*

[R-29] NK054-PLAN-00960-0001, *Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site-Site Preparation.*

[R-30] N-REP-01200-10000, *Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site*.

[R-31] NK054-REP-07730-00029 R00, Environmental *Impact Statement New Nuclear Darlington Environmental Assessment.*

[R-32] NK054-REP-07730-00001, *Atmospheric Environment Existing Environmental Conditions TSD.*

[R-33] NK054-REP-07730-000011, *Atmospheric Environment Assessment of Environmental Effects TSD.*

[R-34] NK054-REP-07730-00002, *Surface Water Environment Existing Environmental Conditions TSD.*

[R-35] NK054-REP-07730-00012, *Surface Water Environment Assessment of Environmental Effects TSD.*

[R-36] NK054-REP-07730-00003, *Aquatic Environment Existing Environmental Conditions TSD.*

[R-37] NK054-REP-07730-00013, *Aquatic Environment Assessment of Environmental Effects TSD.*

[R-38] NK054-REP-07730-00004, *Terrestrial Environment Existing Environmental Conditions TSD.*

[R-39] NK054-REP-07730-00014, *Terrestrial Environment Assessment of Environmental Effects TSD.*

[R-40] NK054-REP-07730-00005, *Geological and Hydrogeological Environment Existing Environmental Conditions TSD.*

[R-41] NK054-REP-07730-00015, *Geological and Hydrogeological Environment Assessment of Environmental Effects TSD.*

[R-42] NK054-REP-07730-00006, *Land Use Environment Existing Environmental Conditions TSD.*

[R-43] NK054-REP-07730-00016, *Land Use Environment Assessment of Environmental Effects TSD.*

[R-44] NK054-REP-07730-00007, *Traffic and Transportation Existing Environmental Conditions TSD.*

[R-45] NK054-REP-07730-00017, *Traffic and Transportation Assessment of Environmental Effects TSD.*

[R-46] NK054-REP-07730-00035, *Traffic and Transportation Environment Enhanced Study Area Traffic Assessment Report.*

[R-47] NK054-REP-07730-00008, *Radiation and Radioactivity Environment Existing Environmental Conditions TSD.*

[R-48] NK054-REP-07730-00018, *Radiation and Radioactivity Environment Assessment of Environmental Effects TSD.*

[R-49] NK054-REP-07730-00009, *Socio-Economic Existing Environmental Conditions TSD.*

[R-50] NK054-REP-07730-00019, *Socio-Economic Assessment of Environmental Effects TSD.*

[R-51] NK054-REP-07730-00010, *Physical and Cultural Heritage Resources Existing Environmental Conditions TSD.*

[R-52] NK054-REP-07730-00020, *Physical and Cultural Heritage Resources Assessment of Environmental Effects TSD.*

[R-53] NK054-REP-07730-00022, *Ecological Risk Assessment and Assessment of Effects on Non-Human Biota TSD.*

[R-54] NK054-REP-07730-00021, *Emergency Planning and Preparedness TSD.*

[R-55] NK054-REP-07730-00028, *Communications and Consultation TSD.*

[R-56] NK054-REP-07730-00026, *Aboriginal interests TSD.*

[R-57] NK054-REP-07730-00025, *Human Health TSD.*

[R-58] NK054-REP-07730-00024, *Malfunctions, Accidents and Malevolent Acts TSD.*

[R-59] NK054-REP-07730-00027, *Nuclear Waste Management TSD.*

[R-60] NK054-REP-00531-10000 R001, *DNGS B Site Specific – Security Threat and Risk Assessment Report*, December 2008.

[R-61] NK054-CORR-00531-00038, *OPG New Nuclear at Darlington Project - Confidential Additional Information in Support of the Application for a Licence to Prepare Site*, September 2009.

[R-62] NK054-CORR-00531-00039, *Darlington New Nuclear Project - Application for a License To Prepare Site - Chapter 6 - Security Protected Information*, September 2009.

[R-63] NK054-CORR-08130-0743509, *Regulatory Affairs Recommendation for a Management System for Early Renewal of DNNP PRSL*, February 2019.

[R-64] NK38-REP-03611-10043 R002, *Hazard Screening Analysis – Darlington*, March 2015.

[R-65] NK38-REP-07701-00001 R001, *Darlington Nuclear Environmental Risk Assessment*, November 2017.

[R-66] NK054-REP-01210-00102, *2018 Darlington New Nuclear Project Annual Report*, March 2019.

[R-67] NK054-REP-01210-00101, *Darlington New Nuclear Project – Site Preparation Licence Midterm Report*, September 2018.

Table 1: List of Codes, Standards and Practices Applicable to Site Evaluation Identified for Review

Source	Document Number	Document Title	Edition/Version/Issue Date	Comment	Level of Review
Table A-1	REGDOC 1.1.1	Site Evaluation and Site Preparation for New Reactor Facilities	July 2018		Incremental Clause by Clause
Table A-2	REGDOC 2.4.3	Nuclear Criticality Safety	2018		Clause by Clause
Table A-1	REGDOC 2.5.2	Design of Reactor Facilities: Nuclear Power Plants	May 2014		Incremental Clause by Clause
Table A-1	REGDOC 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	Version 1.1		Incremental High Level
Table A-2	REGDOC 2.10.1	Nuclear Emergency Preparedness and Response	Version 2 (2017)		Clause by Clause
Table A-1	CSA N286	Management System Requirements for Nuclear Facilities	12	Transitioning to CSA N286-12 Compliant Management System. Original Site Evaluation work was conducted to CSA N286-05. No further review from Site Evaluation perspective.	N/A
Table A-1	CSA N288.1	Guidelines for Calculating Derived Release Limits for Radioactive Material in Airborne and Liquid Effluents for Normal Operation of Nuclear Facilities	14		Incremental High Level.
Table A-1	CSA N288.2	Guidelines for Calculating the Radiological Consequences to the Public of a Release of Airborne Radioactive Material for Nuclear Reactor Accidents	14		Incremental High Level.
Table A-2	CSA N288.4	Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium mines and Mills	10		High Level Review
Table A-2	CSA N288.5	Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	11		High Level Review
Table A-2	CSA N288.6	Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills	12		Clause by Clause
Table A-2	CSA N289.1	General Requirements for Seismic Design and Qualification of CANDU Nuclear Power Plants	18		High Level Review
Table A-1	CSA N289.2	Ground Motion Determination for Seismic Qualification of Nuclear Power Plants	10		Incremental Clause by Clause
Table A-2	CSA N289.3	Design Procedures for Seismic Qualification of Nuclear Power Plants	10		High Level Review
Table A-1	CSA N294	Decommissioning of Facilities Containing Nuclear Substances	09		High Level Review
Table A-2	CSA N1600	General Requirements for Nuclear Emergency Management Programs	16		High Level Review
Table A-1	IAEA NS-R-3	Site Evaluation for Nuclear Installations	Rev 1 2016		Incremental High Level.
Table A-1	IAEA GSR Part 7	Preparedness and Response for a Nuclear or Radiological Emergency	2015		Incremental High Level.
Table A-1	IAEA SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations	2010		Incremental High Level.
Table A-1	IAEA SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations	2011		Incremental High Level.
Table A-2	IAEA SSG-21	Volcanic Hazards in Site Evaluation for Nuclear Installations	2012		High Level Review.
Table A-2	CCME	Canadian Environmental Quality Guidelines	1999-2016	Was Used in EIS and Supporting TSDs for DNNP. Doesn’t look like a newer edition has been issued. Incremental Review only looking for changes.	Incremental High Level.
Table A-2	Health Canada	Generic Criteria and Operational Intervention Levels for Nuclear Emergency Planning and Response	2018	Only review differences between this and 2003 Canadian Guidelines for Intervention During a Nuclear Emergency, as referenced document is superseding document used in EIS work.	Incremental High Level.
Table A-2	Government of Canada	Canadian Climate Normals	Webpage		Incremental Clause by Clause

For those Regulatory Documents and Codes and Standards applying uniquely to the Site Preparation Phase activities OPG must demonstrate it is qualified to carry out future site preparation activities in accordance with these documents through the renewal application. This is accomplished by ensuring that our Management System addresses these codes and standards. As stated in 4.2.3.2, since OPG is planning to adopt the OPGN management system for DNNP, in some cases OPG may propose to demonstrate compliance with an earlier version of the applicable document, if it has implications for the entire OPG fleet, as some programs apply at the fleet level.

Table 2: List of Codes, Standards and Practices Applicable to Site Preparation for Addressing in Management System

Source	Document Number	Document Title	Edition/Version/Issue Date	Version in DNGS PROL	Comment	Level of Management System Compliance (Clause By Clause or High Level)	Rationale and Justification for compliance with DNGS PROL Version Needed? Y/N
Table A-1	REGDOC 1.1.1	Site Evaluation and Site Preparation for New Reactor Facilities	July 2018	Not Referenced.	Will be addressed through compliance review process described in Section 4.2.1	N/A. See comment.	N
Table A-3	REGDOC 2.1.2	Safety Culture	2018	Not Referenced.	CNSC Action item AI 2018-48-15066 required an implementation plan for OPG operating fleet	Will be addressed through the broader fleet implementation plan. Ensure that elements of OPGN Management System are selected for DNNP Site Preparation as part of Management System transition such that future implementation will be captured.	N
Table A-3	REGDOC 2.2.2	Personnel Training	Version 2, 2016	2014		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-3	REGDOC 2.3.1	Conduct of Licensed Activities: Construction and Commissioning Programs	2016	No Version Specified, Listed as Guidance Only.		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-1	REGDOC 2.5.2	Design of Reactor Facilities: Nuclear Power Plants	2014	No Version Specified, Listed as Guidance Only.		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-1	REGDOC 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	Version 1.1	2013		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-2	REGDOC 2.10.1	Nuclear Emergency Preparedness and Response	Version 2 (2017)	2014		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-2	REGDOC 2.12.1	High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices	April 2018	RD-321 2010 RD-361 2010		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-2	REGDOC 2.12.2	Site Access Security Clearance	2013	2013		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-3	REGDOC 3.1.1	Reporting Requirements for Nuclear Power Plants	2016	2014		Ensure has been addressed High Level in OPGN Management System in elements of OPGN Management System Selected for DNNP Site	Y

Source	Document Number	Document Title	Edition/Version/Issue Date	Version in DNGS PROL	Comment	Level of Management System Compliance (Clause By Clause or High Level)	Rationale and Justification for compliance with DNGS PROL Version Needed? Y/N
						Preparation as part of Management System transition.	
Table A-1	REGDOC 3.2.1	Public Information and Disclosure	May 2018	RD-99.3 2012		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	Y
Table A-2	REGDOC 3.2.2	Aboriginal Engagement	2016	Not Referenced.		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N will ensure current version addressed in DNNP Management System.
Table A-2	RD/GD 369	Licence to Construct a Nuclear Power Plant	2011	Not Referenced.		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N will ensure current version addressed in DNNP Management System
Table A-1	CSA N286	Management System Requirements for Nuclear Facilities	12	12	Transitioning to CSA N286-12 Compliant Management System	Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-2	CSA N288.4	Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium mines and Mills	10	10		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-2	CSA N288.5	Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	11	11		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-2	CSA N288.6	Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills	12	12		Ensure has been addressed Clause by Clause in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-2	CSA N288.7	Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills	15	Not Referenced.	Compliance Target of 2020.	Will be addressed through the broader fleet implementation plan. Ensure that elements of OPGN Management System are selected for DNNP Site Preparation as part of Management System transition such that future implementation will be captured.	N
Table A-2	CSA N288.8	Establishing and Implementing Action Levels for Release to the Environment from Nuclear Facilities	17	Not Referenced.		Will need to be addressed through the broader fleet implementation plan. Ensure that elements of OPGN Management System are selected for DNNP Site Preparation as part of Management System transition such that future implementation will be captured.	N
Table A-2	CSA N290.7	Cyber Security for Nuclear Power Plants and Small Reactor Facilities	14	14		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N

Source	Document Number	Document Title	Edition/Version/Issue Date	Version in DNGS PROL	Comment	Level of Management System Compliance (Clause By Clause or High Level)	Rationale and Justification for compliance with DNGS PROL Version Needed? Y/N
Table A-1	CSA N294	Decommissioning of Facilities Containing Nuclear Substances	09	09		Ensure has been addressed High Level in elements of OPGN Management System Selected for DNNP Site Preparation as part of Management System transition.	N
Table A-2	CSA N1600	General Requirements for Nuclear Emergency Management Programs	16	Not referenced.		Will need to be addressed through the broader fleet implementation plan. Ensure that elements of OPGN Management System are selected for DNNP Site Preparation as part of Management System transition such that future implementation will be captured.	N

Table 3: Mapping of Original Application Materials Against CMD Review Topics (Site Evaluation)

Site Evaluation		
Review Topic	**Mapping to REGDOC 1.1.1**	**OPG Document(s)**
Plant Parameter Envelope		
Plant Parameter Envelope	High level requirements and specific criteria to support site evaluation and site preparation: Appendix F.1.3 Criteria for level of design detail for an application for a license to prepare site Appendix F.2.2 Assessment of non-malevolent accidents and malfunctions	N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations.
Site Characteristics		
Location and Topography	High level requirements: Appendix A.5 Location and site layout Specific criteria: Section 4.6.3 Layout of areas, structures and systems Supporting information: Section 3.7.1 Physical protection Section 3.7.2 Transportation routes	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations.
Atmospheric and meteorological data	High level requirements: Section 3.4.1 Atmospheric and meteorological data Specific criteria: Appendix C.2 Baseline climate, meteorological data and air quality data Supporting information Section 3.4 Gathering Baseline Data Appendix B.3 Process for gathering baseline data	NK054-REP-01210-00012 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-01210-00013 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 4: Evaluation of Meteorological events. N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site. NK054-REP-07730-00001, Atmospheric Environment Existing Environmental Conditions TSD. NK054-REP-07730-000011, Atmospheric Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00008, Radiation and Radioactivity Environment Existing Environmental Conditions TSD.
Geological and Geophysical data	High level requirements: Section 3.4.2 Geological data Section 3.4.3 Geophysical data Appendix C.3 Baseline geological, geotechnical, and coastal geomorphological data and baseline information on geotechnical and seismic hazards Specific criteria: Appendix C.3.1 Geology and structural geology Appendix C.3.2 Geotechnical data Appendix C.3.3 Coastal geomorphological data Appendix C.3.4 Characterization of potential geotechnical hazards Appendix C.3.5 Characterization of potential seismic hazards Supporting information:	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00014 R001, Site Evaluation of the OPG New Nuclear at Darlington- Probabilistic Seismic Hazard. NK054-REP-01210-00011 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 6 Evaluation of Geotechnical aspects. NK054-REP-07730-00015, Geological and Hydrogeological Environment Assessment of Environmental Effects TSD. NK054-REP-01210-00014 R001, Site Evaluation of the OPG New Nuclear at Darlington - Probabilistic Seismic Hazard. NK054-REP-07730-00005, Geological and Hydrogeological Environment Existing Environmental Conditions TSD. NK054-REP-01210-00012 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment.

	Section 3.4 Gathering Baseline Data Appendix B.3 Process for gathering baseline data	N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site. NK054-REP-07730-00002, Surface Water Environment Existing Environmental Conditions TSD.
Hydrological data	High level requirements: Section 3.4.4 Hydrological data Appendix C.4 Baseline hydrology-normal flow, flood and drought Appendix C.5 Baseline surface water, sediment and groundwater quality data Specific criteria: Appendix C.4.1General surface-water Appendix C.4.2 Freshwater streams Appendix C.4.3 Lakes and impoundments Appendix C.5.1Contaminants of potential concern Appendix C.5.2 Baseline surface water quality Appendix C.5.3 Baseline sediment quality Supporting information: Section 3.4 Gathering Baseline Data Appendix B.3 Process for gathering baseline data	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00012 R002, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water. NK054-REP-07730-00002, Surface Water Environment Existing Environmental Conditions TSD. NK054-REP-07730-00022, Ecological Risk Assessment and Assessment of Effects on Non-Human Biota TSD. NK054-REP-07730-00012, Surface Water Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00003, Aquatic Environment Existing Environmental Conditions TSD.
Hydrogeological data	High level requirements: Section 3.4.5 Hydrogeological data Appendix C.5 Baseline surface water, sediment and groundwater quality data Specific criteria: Appendix C.5.4 Baseline hydrogeology and groundwater quality Supporting information: Section 3.4 Gathering Baseline Data Appendix B.3 Process for gathering baseline data	NK054-REP-07730-00002, Surface Water Environment Existing Environmental Conditions TSD. NK054-REP-07730-00012, Surface Water Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00022, Ecological Risk Assessment and Assessment of Effects on Non-Human Biota TSD. NK054-REP-07730-00025, Human Health TSD. NK054-REP-07730-00005, Geological and Hydrogeological Environment Existing Environmental Conditions TSD. NK054-REP-07730-00015, Geological and Hydrogeological Environment Assessment of Environmental Effects TSD.
Biological data	High level requirements: Section 3.4.6 Biological data Specific criteria: Appendix C.6 Baseline terrestrial flora, fauna and food chain Appendix C.7.1Baseline aquatic biota and habitat Appendix C.7.2 Baseline food chain data Supporting information (with respect to the role biological data plays to identify VCs in pathways modeling): Section 3.3.4 Determining the potential effect of the site on the environment Supporting information: Section 3.4 Gathering Baseline Data Appendix B.3 Process for gathering baseline data	NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-07730-00004, Terrestrial Environment Existing Environmental Conditions TSD. NK054-REP-07730-00014, Terrestrial Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00005, Geological and Hydrogeological Environment Existing Environmental Conditions TSD. NK054-REP-07730-00022, Ecological Risk Assessment and Assessment of Effects on Non-Human Biota TSD. NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-07730-00012, Surface Water Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00003, Aquatic Environment Existing Environmental Conditions TSD. NK054-REP-07730-00013, Aquatic Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts TSD.
Baseline pre-existing radioactivity and pre-existing hazardous substances	High level requirements: Section 3.4.7 Baseline ambient radioactivity and pre-existing hazardous substances Specific criteria with respect to ambient radioactivity and hazardous substances: Appendix C.8 Baseline ambient radioactivity and ambient non-radioactive hazardous substances	NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water. NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-07730-00001, Atmospheric Environment Existing Environmental Conditions TSD.

		NK054-REP-07730-000011, Atmospheric Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00002, Surface Water Environment Existing Environmental Conditions TSD. NK054-REP-07730-00012, Surface Water Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00013, Aquatic Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00015, Geological and Hydrogeological Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00008, Radiation and Radioactivity Environment Existing Environmental Conditions TSD. NK054-REP-07730-00018, Radiation and Radioactivity Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00022, Ecological Risk Assessment and Assessment of Effects on Non-Human Biota TSD.
Population Distribution/ Use of Land and Water	High level requirements and specific criteria: Appendix C.9 Baseline land use data Supporting information: Section 3.3.5 Population and emergency planning considerations Section 3.3.6 Consideration of future life-extension activities	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water. NK054-REP-07730-00006, Land Use Environment Existing Environmental Conditions TSD. NK054-REP-07730-00016, Land Use Environment Assessment of Environmental Effects TSD.
Evaluation of Natural External Events		
Meteorological hazards	High level requirements and specific criteria: Section 3.5.2 Meteorological hazards Appendix E.3 Prediction of meteorological events Supporting information: Section 3.4.1 Atmospheric and meteorological data Appendix C.2 Baseline climate, meteorological data and air quality data	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00013 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 4: Evaluation of Meteorological events.
Surface water hazards	High level requirements and specific criteria with respect to floods: Section 3.5.3 Surface water hazards Appendix E.4 Design-basis flood High level requirements and specific criteria with respect to adequacy of water supply: Section 3.5.3 Surface water hazards Appendix E.5 Water supply adequacy Supporting information: Section 3.4.4 Hydrological data Appendix C.4 Baseline hydrology-normal flow, flood and drought Appendix C.4.1General surface-water Appendix C.4.2 Freshwater streams Appendix C.4.3 Lakes and impoundments Appendix C.5 Baseline surface water, sediment and groundwater quality data Appendix C.5.1Contaminants of potential concern Appendix C.5.2 Baseline surface water quality Appendix C.5.3 Baseline sediment quality	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00012 R002, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water.
Groundwater hazards	High level requirement: Section 3.5.4 Groundwater hazards Specific criteria: Appendix E.6 Prediction of groundwater, geotechnical, seismic and surface faulting events	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00012 R002, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water.

	Supporting information: Section 3.4.5 Hydrogeological data Appendix C.5 Baseline surface water, sediment and groundwater quality data Appendix C.5.4 Baseline hydrogeology and groundwater quality	
Geotechnical Hazard Assessment	High level requirements and specific criteria: Section 3.5.5 Geotechnical hazards Appendix E.6 Prediction of groundwater, geotechnical, seismic and surface faulting events Supporting information: Section 3.4.2 Geological data Section 3.4.3 Geophysical data Appendix C.3 Baseline geological, geotechnical, and coastal geomorphological data and baseline information on geotechnical and seismic hazards Appendix C.3.1 Geology and structural geology Appendix C.3.2 Geotechnical data Appendix C.3.3 Coastal geomorphological data Appendix C.3.4 Characterization of potential geotechnical hazards Appendix C.3.5 Characterization of potential seismic hazards	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00011 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 6 Evaluation of Geotechnical aspects.
Seismic and Geophysical hazards	High level requirements and specific criteria: Section 3.5.6 Geophysical hazards Appendix E.6 Prediction of groundwater, geotechnical, seismic and surface faulting events Supporting information: Section 3.4.2 Geological data Section 3.4.3 Geophysical data Section 3.5.5 Geotechnical hazards Appendix C.3 Baseline geological, geotechnical, and coastal geomorphological data and baseline information on geotechnical and seismic hazards Appendix C.3.1 Geology and structural geology Appendix C.3.2 Geotechnical data Appendix C.3.3 Coastal geomorphological data Appendix C.3.4 Characterization of potential geotechnical hazards Appendix C.3.5 Characterization of potential seismic hazards	NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00014 R001, Site Evaluation of the OPG New Nuclear at Darlington- Probabilistic Seismic Hazard. NK054-REP-01210-00015 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 3: Summary of Seismic Hazard Evaluations.
Biological hazards	High level requirements and specific criteria: Section 3.5.7 Biological hazards Appendix E.7 Prediction of non-malevolent biological events Supporting information: Appendix C.6 Baseline terrestrial flora, fauna and food chain Appendix C.7.1Baseline aquatic biota and habitat Appendix C.7.2 Baseline food chain data	NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment.
Naturally occurring fire hazards	High level requirement: Section 3.5.8 Natural fire hazards Specific criteria: Appendix E.8 Prediction of non-malevolent external fire and explosion events	N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site. NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment.
Climate change	High level requirements and examples: Section 3.5.1 Climate change	N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site.

	Specific criteria: Appendix E.2 Potential change of the climate and environment	NK054-REP-01210-00078, Darlington New Nuclear Project Commitments Report.
Evaluation of External Non-Malevolent, Human Induced Events		
Aircraft crashes	High level requirement: Section 3.6.1 Aircraft crashes Specific criteria: Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document.
Other transportation hazards	High level requirement: Section 3.6.2 Other transportation hazards Specific criteria: Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document.
Fires and explosions	High level requirement: Section 3.6.3 Fires and explosions Specific criteria: Appendix E.8 Prediction of non-malevolent external fire and explosion events Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document.
Chemical and radiological hazards	High level requirement: Section 3.6.4 Chemical and radiological hazards Specific criteria: Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document.
Electromagnetic interference	High level requirement: Section 3.6.5 Electromagnetic interference Specific criteria: Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document.
Assessment of Site Suitability		
Evaluation of hazards associated with external events	High level requirements and specific criteria: Section 3.3.2 Consideration of the evolution of natural and human-induced factors Section 3.3.3 Evaluation of hazards associated with external events	NK054-CORR-00531-00035, OPG New Nuclear at Darlington Project- Application for a Licence to Prepare a Site. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00010 R001 Summary Report: Site Evaluation Studies for Nuclear Installations at Darlington External Human Induced Events. NK054-REP-01210-00011 R001 Site Evaluation of the OPG New Nuclear at Darlington- Part 6 Evaluation of Geotechnical aspects. NK054-REP-01210-00012 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 5: Flood Hazard Assessment. NK054-REP-01210-00013 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 4: Evaluation of Meteorological events. NK054-REP-01210-00014 R001, Site Evaluation of the OPG New Nuclear at Darlington- Probabilistic Seismic Hazard. NK054-REP-01210-00015 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 3: Summary of Seismic Hazard Evaluations.

		NK054-REP-01210-00016 R002, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water. NK054-REP-01210-00017 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 1 External Human Induced Events. NK054-REP-01210-00018 R001, Site Evaluation of the OPG New Nuclear at Darlington- Additional Considerations.
Evaluation against safety goals from a site perspective / Evaluation of Radiological Dose Consequences for Normal Operations and Accident Conditions	High level requirements: Section 3.3.1 Evaluation against safety goals from a site perspective Appendix F: Assessment of Non-Malevolent Accidents and Malfunctions, and of the Consequences Specific Criteria: Appendix G.1 General considerations Specific criteria with respect to identification and classification of accidents, calculation of accident consequences, and meeting safety goals Appendix F.2.2 Assessment of non-malevolent nuclear accidents and malfunctions Specific criteria with respect to human exposure pathways during normal and accident conditions both onsite and offsite: Appendix G.7 Effects of the project on human health Appendix G.7.1 Radiological risks Appendix G.7.2 Mitigation strategies	NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-07730-00018, Radiation and Radioactivity Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00027, Nuclear Waste Management TSD. N-REP-01200-10000, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for Darlington Nuclear Site. NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-07730-00025, Human Health TSD.
Determining the potential effect of the site on the environment	High level requirements and guidelines: Section 3.3.4 Determining the potential effect of the site on the environment Appendix F: Assessment of Non-Malevolent Accidents and Malfunctions, and of the Consequences Appendix G: Effects of the Project on the Environment	NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations.
Population and emergency planning considerations	For specific information on emergency response Section 3.3.5 Population and emergency planning considerations Section 4.10 Emergency management and fire protection Appendix B.4 Process to evaluate natural and human-induced factors that may affect safety and security For specific information on exclusion zone determination: Section 3.3.5 Population and emergency planning considerations Section 3.3.6 Consideration Section 4.6.1 Exclusion zone and emergency planning zone Appendix C.9 Baseline land use Appendix F.2.3 Prediction of non-malevolent radiological accidents and malfunctions occurring outside the reactor core and out-of-core nuclear criticality safety Appendix F.2.4 Prediction of non-malevolent radiological accidents and malfunctions occurring outside the reactor core and out-of-core nuclear criticality safety Appendix G.2 Effects of the project on air quality	NK054-REP-07730-00021, Emergency Planning and Preparedness TSD. NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts TSD. NK054-REP-07730-00006, Land Use Environment Existing Environmental Conditions TSD. NK054-REP-07730-00016, Land Use Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00001, Atmospheric Environment Existing Environmental Conditions TSD. NK054-REP-07730-000011, Atmospheric Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00008, Radiation and Radioactivity Environment Existing Environmental Conditions TSD. NK054-REP-07730-00018, Radiation and Radioactivity Environment Assessment of Environmental Effects TSD. NK054-REP-07730-00025, Human Health TSD. NK054-REP-03490-00001, Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington. NK054-01210-00003, Exclusion Zone Determination for Darlington New Nuclear Project. NK054-REP-01210-00016 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 2: Dispersion of Radioactive Materials in Air and Water. NK054-REP-01210-00017 R001, Site Evaluation of the OPG New Nuclear at Darlington- Part 1 External Human Induced Events.

		NK054-REP-01210-00010 R001, Summary Report: Site Evaluation Studies for Nuclear Installations at Darlington External Human Induced Events. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations.
Security considerations. *Note: this review will be completed in a separate document from the main CMD*	High level requirements and guidelines: Section 3.7 Security Considerations (and all subsections) Appendix B.4 Process to evaluate natural and human-induced factors that may affect safety and security Appendix D (and all subsections) REGDOC 1.1.1, Site Evaluation and Site Preparation for New Reactor Facilities, Section 4.12.7 Cyber security	NK054-REP-00531-10000 R001, DNGS B Site Specific – Security Threat and Risk Assessment Report, December 2008. NK054-CORR-00531-00038, OPG New Nuclear at Darlington Project -Confidential Additional Information in Support of the Application for a Licence to Prepare Site, September 2009. NK054-CORR-00531-00039, Darlington New Nuclear Project - Application for a License To Prepare Site - Chapter 6 - Security Protected Information, September 2009.
Overall evaluation of site suitability	High level requirements: Section 3.3 General criteria for site evaluation Specific criteria on future connections to the grid: Section 3.6.6 Consideration of future connections to the grid Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events Specific criteria on decommissioning: Section 3.9 Decommissioning High level requirements and specific criteria with respect to management system of site evaluation process: Section 3.8 Management system Specific criteria applicable to management system of site evaluation process: Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System. NK054-REP-01210-00078 R002, DNNP Commitments Report. NK054-REP-07730-00024, Malfunctions, Accidents and Malevolent Acts Technical Support Document. NK054-PLAN-00960-0001, Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site-Site Preparation. NK054-REP-07730-00027, Nuclear Waste Management TSD. NK054-CORR-00531-10467, Darlington New Nuclear Project: Preliminary Decommissioning Plan. NK054-REP-07730-00029 R00 Environmental Impact Statement New Nuclear Darlington Environmental Assessment. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations. NK054-REP-01210-00008 R001, Site Evaluation for New Nuclear at Darlington - Nuclear Safety Considerations.

Table 4: Mapping of Original Application Materials Against CMD Review Topics (Site Preparation)

Site Preparation		
Review Topic	**Mapping to REGDOC 1.1.1**	**OPG Documents**
Management system		
Management system	Section 3.8 Management system Section 4.3 Management system AppendixA.2 Structure and organization of the information in the licence application Appendix A.3 Applicant's General Information (all subsections) Appendix A.4.1 Activity to be licensed Appendix A.4.2 Descriptive overview Appendix A.6 Safety and Control Measures Appendix F.1.1 Decision-making considerations Appendix F.1.2 Considerations that will carry forward to an application for a licence to construct	PRSL-18.00/2022, Nuclear Power Reactor Site Preparation Licence – OPG New Nuclear at Darlington Generating Station, August 2012. LCH-PRSL-DNNP R001, OPG New Nuclear at Darlington Generating Station Nuclear Power Reactor Site Preparation Licence PRSL 18.00/2022, August 2012. NK054-CHAR-0001 R006, DNNP Management System. NK054-CORR-00531-00035, OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site, September 2009.
Organization	Section 3.8 Management system Section 4.3 Management system Appendix A.3 Applicant's General Information	PRSL-18.00/2022, Nuclear Power Reactor Site Preparation Licence – OPG New Nuclear at Darlington Generating Station, August 2012. LCH-PRSL-DNNP R001, OPG New Nuclear at Darlington Generating Station Nuclear Power Reactor Site Preparation Licence PRSL 18.00/2022, August 2012. NK054-CORR-00531-00035, OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site, September 2009.
Performance assessment, improvement and management review	Section 3.8 Management system Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Operating experience (OPEX)	Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Change management	Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Safety culture	Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Configuration management	Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Records management	Section 4.3 Management system	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Management of contractors	Section 4.3 Management system Section 4.9.2 Performance of site preparation and facility construction by different organizations	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Design governance	Section 4.3.2 Management system for design activities during site preparation Section 4.3.3 Design of the nuclear facility - design control measures Section 4.3.4 Where a specific facility design has been selected Section 4.3.5 When facility design selection is deferred Appendix F.1.3 Criteria for level of design detail for an application for a licence to prepare site Appendix G.7.2 Mitigation strategies	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.

Site Preparation		
Review Topic	**Mapping to REGDOC 1.1.1**	**OPG Documents**
Operating Performance		
Conduct of licensed activity	Section 4.4 Operating performance Section 4.9.2 Performance of site preparation and facility construction by different organizations	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Procedures	Section 4.4 Operating performance Section 4.9.2 Performance of site preparation and facility construction by different organizations	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Reporting and Trending		NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Physical Design		
Facility design	Section 4.6.2 Civil structures and civil works Section 4.6.3 Layout of areas, structures and systems	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Structure, system, and component design	Section 4.6.2 Civil structures and civil works Section 4.6.3 Layout of areas, structures and systems	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Radiation protection		
Application of ALARA	Section 4.7 Radiation protection measures	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Worker dose control	Section 4.7 Radiation protection measures	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Radiation protection program performance	Section 4.7 Radiation protection measures	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Radiological hazard control	Section 4.7 Radiation protection measures	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Estimated dose to public	Section 4.7 Radiation protection measures	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Conventional Health and Safety		
Performance, Practices, Awareness	Section 4.8 Conventional health and safety	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Environmental Protection		
Effluent and emissions control (releases)	Section 4.5 Safety Analysis Section 4.9 Environmental protection (including all subsections)	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Assessment and monitoring	Section 4.5 Safety Analysis Section 4.9 Environmental protection (including all subsections)	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Environmental management system (EMS)	Section 4.5 Safety Analysis Section 4.9 Environmental protection (including all subsections)	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.

Site Preparation		
Review Topic	**Mapping to REGDOC 1.1.1**	**OPG Documents**
Protection of the public	Section 4.5 Safety Analysis Section 4.9 Environmental protection (including all subsections)	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Environmental risk assessment	Section 4.5 Safety Analysis Section 4.9 Environmental protection (including all subsections)	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Emergency Management and Fire Protection		
Conventional emergency preparedness and response	Section 3.3.4 Determining the potential effects of the site on the environment Section 4.4 Operating performance Section 4.10 Emergency management and fire protection Appendix F.2.1 Assessment of non-malevolent conventional accidents and malfunctions events	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Nuclear emergency preparedness and response	Section 4.10 Emergency management and fire protection Appendix E.8 Prediction of non-malevolent external fire and explosion events Appendix B.4 Process to evaluate natural and human-induced factors	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Fire emergency preparedness and response	Section 4.10 Emergency management and fire protection Appendix E.8 Prediction of non-malevolent external fire and explosion events Appendix B.4 Process to evaluate natural and human-induced factors	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Waste Management		
Waste characterization	Section 4.11Waste Management Section 4.11.1 Hazardous substances and hazardous wastes	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Waste minimization	Section 4.11Waste Management Section 4.11.1 Hazardous substances and hazardous wastes	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Waste management practices	Section 4.11Waste Management Section 4.11.1 Hazardous substances and hazardous wastes	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Decommissioning plans	Section 4.11.2 Decommissioning Section 3.9 Decommissioning	NK054-PLAN-00960-0001, Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site-Site Preparation
Security		
Facilities and equipment	Section 4.12.1 General consideration for security Section 4.12.2 Prescribed information Section 4.12.3 Site security measures Section 4.12.6 Physical security Appendix A.1 General considerations Appendix B.4 Process to evaluate natural and human-induced factors that may affect safety and security Appendix D (and all subsections) Section 4.12.7 Cyber security	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Response arrangements	Section 4.12.5 Security arrangements with offsite response forces Section 4.12.8 Security officer program	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Security practices	Section 4.12.4 Site access clearance	NK054-CHAR-0001 R006, DNNP Management System and associated documents.

Site Preparation		
Review Topic	**Mapping to REGDOC 1.1.1**	**OPG Documents**
		NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Safeguards and Non-Proliferation		
Nuclear material accountancy and control	Section 4.13 Safeguards and non-proliferation Appendix A.6.11 Safeguards and non-proliferation	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Access and assistance to the IAEA	Section 4.13 Safeguards and non-proliferation Appendix A.6.11 Safeguards and non-proliferation	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Operational and design information	Section 4.13 Safeguards and non-proliferation Appendix A.6.11 Safeguards and non-proliferation	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Safeguards equipment, containment and surveillance	Section 4.13 Safeguards and non-proliferation Appendix A.6.11 Safeguards and non-proliferation	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Import and export	Section 4.13 Safeguards and non-proliferation Appendix A.6.11 Safeguards and non-proliferation	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Other Matters of Regulatory Interest		
Licensee public information program	Section 4.14.1 Public information and disclosure program For supplementary information: Section 3.2 Site evaluation methodology	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
CNSC Aboriginal consultation	Section 4.14.2 Aboriginal engagement	NK054-CHAR-0001 R006, DNNP Management System and associated documents. NK054-REP-01210-00078 R002, DNNP Commitments Report for elements yet to be developed.
Financial guarantees	Section 4.14.4 Financial guarantees	NK054-CORR-00531-10467, Darlington New Nuclear Project: Preliminary Decommissioning Plan

Appendix A: Current Codes, Standards and Practices Source Lists and Down-Selection.

Table A-1: List of Licence Basis Codes, Standards and Practices and Current Equivalents

Licence Basis Codes, Standards and Practices				Current Equivalent			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Source	**Document Number**	**Document Title**	**Edition/Version/Issue Date**	**Document Number**	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
LCH	RD-346	Site Evaluation for New Nuclear Power Plants	R000, 2008	REGDOC 1.1.1.	Site Evaluation and Site Preparation for New Reactor Facilities	July 2018	Both	Y	
Site Evaluation	RD-337	Design of New Nuclear Power Plants	2008	REGDOC 2.5.2	Design of Reactor Facilities: Nuclear Power Plants	May 2014	Both	Y	
PRSL, LCH	S-296 G-296	Environmental Protection Policies, Programs and Procedures at Class I Nuclear Facilities and Uranium Mines and Mills	2006	REGDOC 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	Version 1.1	Both	Y	
PRSL, LCH	RD/GD-99.3	Public Information and Disclosure	R000, 2012	REGDOC 3.2.1	Public Information and Disclosure	May 2018	Site Preparation	Y	
LCH	G-206	Financial Guarantees for the Decommissioning of Licensed Activities	R000, 2000	G-206	Financial Guarantees for the Decommissioning of Licensed Activities	R000, 2000	Site Preparation	N	No change since original application.
LCH	G-219	Decommissioning Planning for Licensed Activities	R000, 2000	G-219	Decommissioning Planning for Licensed Activities	R000, 2000	Both	N	No change since original application.
PRSL, LCH, Site Evaluation	CSA N286	Management System Requirements for Nuclear Power Plants	05	CSA N286	Management System Requirements for Nuclear Facilities	12	Both	Y	
Site Evaluation	CSA N288.1	Guidelines for Calculating Derived Release Limits for Radioactive Material in Airborne and Liquid Effluents for Normal Operation of Nuclear Facilities	08	CSA N288.1	Guidelines for Calculating Derived Release Limits for Radioactive Material in Airborne and Liquid Effluents for Normal Operation of Nuclear Facilities	14	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	CSA N288.2	Guidelines for Calculating Radiation Doses to the Public from a release of airborne Radioactive material under hypothetical accident conditions in Nuclear Reactors	M91	CSA N288.2	Guidelines for Calculating the Radiological Consequences to the Public of a Release of Airborne Radioactive Material for Nuclear Reactor Accidents	14	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	CSA N289.2	Ground Motion Determination for Seismic Qualification of CANDU Nuclear Power Plants	M81	CSA N289.2	Ground Motion Determination for Seismic Qualification of Nuclear Power Plants	10	Site Evaluation	Y	Only as it applies to Site Evaluation.
PRSL, LCH	CSA N294	Decommissioning of Facilities Containing Nuclear Substances	09	CSA N294	Decommissioning of Facilities Containing Nuclear Substances	09	Both	Y	No change since original application. Cited in the LCH. However was not used in the development of Preliminary Decommissioning Plans.
Site Evaluation	IAEA NS-R-3	Site Evaluation for Nuclear Installations	2003	IAEA NS-R-3 (Rev 1.)	Site Evaluation for Nuclear Installations	2016	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	IAEA GS-R-2	Preparedness and Response for a Nuclear or Radiological Emergency	2002	IAEA GSR Part 7	Preparedness and Response for a Nuclear or Radiological Emergency	2015	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	IAEA NS-G-3.1	External Human Induced Events in Site Evaluation for Nuclear Power Plants	May 2002	IAEA NS-G-3.1	External Human Induced Events in Site Evaluation for Nuclear Power Plants	May 2002	Site Evaluation	N	No change since original application.

Licence Basis Codes, Standards and Practices				Current Equivalent			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Source	**Document Number**	**Document Title**	**Edition/Version/Issue Date**	**Document Number**	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
Site Evaluation	IAEA NS-G-3.2	Dispersion of Radioactive Material in Air and Water and Consideration of Population Distribution in Site Evaluation for Nuclear Power Plants	March 2002	IAEA NS-G-3.2	Dispersion of Radioactive Material in Air and Water and Consideration of Population Distribution in Site Evaluation for Nuclear Power Plants	March 2002	Site Evaluation	N	No change since original application.
Site Evaluation	IAEA NS-G-3.3	Evaluation of Seismic Hazards for Nuclear Power Plants	Dec 2002	IAEA SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations	2010	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	IAEA NS-G-3.4	Meteorological Events in Site Evaluation for Nuclear Power Plants	May 2003	IAEA SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations	2011	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	IAEA NS-G-3.5	Flood Hazard for Nuclear Power Plant on Coastal and River Sites	2003	IAEA SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations	2011	Site Evaluation	Y	Only as it applies to Site Evaluation.
Site Evaluation	IAEA NS-G-3.6	Geotechnical Aspects of Site Evaluations and Foundations for Nuclear Power Plants	2004	IAEA NS-G-3.6	Geotechnical Aspects of Site Evaluations and Foundations for Nuclear Power Plants	2004	Site Evaluation	N	No change since original application.
LCH	ISO 14001	Environmental Management System	2004	ISO 14001	Environmental Management System	2015	Site Preparation	N	OPG obtained and holds a valid Certificate of Registration to ISO 14001:2015 as of September 1st, 2018. No further review required.
Site Evaluation	NBCC	National Building Code of Canada	2005	NBCC	National Building Code of Canada	2015	Both	N	OPG considered NBCC:2005 at the site evaluation stage and OPG found that site specific peak ground accelerations developed using approaches described in CSA N289 series of standards would be more appropriate for the basis of Site Evaluation for DNNP. In addition, OPG found that exceedance probabilities required to be consider through CSA N289 are more stringent than those in NBCC. As a result, although NBCC was considered, it does not form the basis of the Geotechnical and PSHA for DNNP. The basis was formed through application of principles described in the CSA N289 series of standards. Therefore, OPG does not consider it necessary to conduct a review of the latest NBCC Code for DNNP PRSL Renewal.

Table A-2: Codes, Standards and Practices Referenced in REGDOC 1.1.1.

REGDOC 1.1.1 Referenced Codes, Standards and Practices			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
REGDOC 2.2.4	Fitness for Duty: Volume I: Managing Worker Fatigue	2017	Site Preparation	N	Only applies to certain roles at a nuclear facility. None of the roles identified would be required at the time of Site Preparation.
REGDOC 2.2.4	Fitness for Duty: Volume II: Managing Alcohol and Drug Use	Version 2, 2018	Site Preparation	N	Only applies to certain roles at a nuclear facility. None of the roles identified would be required at the time of Site Preparation.
REGDOC 2.4.3	Nuclear Criticality Safety	2018	Site Evaluation	Y	
REGDOC 2.5.2	Design of Reactor Facilities: Nuclear Power Plants	2014	Both	Y	See Table A-1.
REGDOC 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	Version 1.1 (2017)	Both	Y	See Table A-1.
REGDOC 2.10.1	Nuclear Emergency Preparedness and Response	Version 2 (2017)	Both	Y	
REGDOC 2.12.2	Site Access Security Clearance	2013	Site Preparation	Y	Since DNNP would be constructed within the bounds of the existing Darlington Nuclear Site, in accordance with DNGS Security policies workers would be required to obtain appropriate access security clearance in order to work on the DNGS site.
REGDOC 2.12.3	Security of Nuclear Substances: Sealed Sources	2013	Both	N	Administrative item. Related to the transmission of security related information to CNSC.
REGDOC 2.13.2	Import and Export	2016	Site Preparation	N	Import and Export of controlled nuclear substances, equipment and information is typically controlled via a separate licence and therefore this regulatory document is not directly applicable to DNNP PRSL other than, if import or export of controlled nuclear information is required as part of Site Preparation activities that OPG ensure a licence is obtained to transfer that information. OPG maintains procedures under N-PROG-RA-0002 Conduct of Regulatory Affairs, to obtain Import and Export licenses as required. No further assessment required.
REGDOC 3.2.2	Aboriginal Engagement	2016	Site Preparation	Y	
REGDOC 3.5.1	Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills	Version 2 (2017)	Site Evaluation	N	Administrative item. Information on CNSC Processes.
RD/GD 99.3	Public Information and Disclosure	2012	Site Preparation	Y	See Table A-1. Superseded by REGDOC 2.3.1
RD-321	Criteria for Physical Protection Systems and Devices at High Security Sites	2010	Site Preparation	Y	Superseded by REGDOC 2.12.1 Volume II.
RD-336	Accounting and Reporting of Nuclear Material	2010	Site Preparation	N	Superseded by REGDOC 2.13.1. OPG is not requesting any Nuclear Material be part of the Site Preparation Licence therefore this RD/REGDOC would not be applicable and no further assessment is required.
RD-361	Criteria for Explosive Substance Detection, X-ray Imaging, and Metal Detection Devices at High-Security Sites	2010	Site Preparation	Y	Superseded by REGDOC 2.12.1 Volume II.
RD-363	Nuclear Security Officer Medical, Physical and Psychological Fitness Training	2008	Site Preparation	N	REGDOC-2.2.4, Fitness for Duty, Volume III. Only applies to certain roles at a nuclear facility. None of the roles identified would be required at the time of Site Preparation.
RD/GD 369	Licence to Construct a Nuclear Power Plant	2011	Site Preparation	Y	
G-206	Financial Guarantees for the Decommissioning of Licensed Activities	2000	Site Preparation	N	See Table A-1.
G-219	Decommissioning Planning for Licensed Activities	2000	Both	N	See Table A-1.
G-228	Developing and Using Action Levels	2001	Site Preparation	N	OPG is not planning to conduct radioactive work as part of Site Preparation activities. Therefore, action levels for dose when performing radioactive work is not applicable to the DNNP PRSL at this time. If required, OPG maintains defined action levels and associated procedures under N-PROG-RA-0013 Radiation Protection. No further assessment required.
G-274	Security Programs for Category I or II Nuclear Material or Certain Nuclear Facilities	2003	Site Preparation	N	Administrative item. Related to the transmission of security related information to CNSC.
CSA N286	Management System Requirements for Nuclear Facilities	12	Both	Y	See Table A-1.

REGDOC 1.1.1 Referenced Codes, Standards and Practices			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
CSA N288.1	Guidelines for Calculating Derived Release Limits for Radioactive Material in Airborne and Liquid Effluents for Normal Operation of Nuclear Facilities	2014	Site Evaluation	Y	See Table A-1.
CSA N288.2	Guidelines for Calculating the Radiological Consequences to the Public of a Release of Airborne Radioactive Material for Nuclear Reactor Accidents	2014	Site Evaluation	Y	See Table A-1.
CSA N288.4	Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium mines and Mills	10	Both	Y	
CSA N288.5	Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	11	Both	Y	
CSA N288.6	Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills	12	Both	Y	
CSA N288.7	Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills	15	Site Preparation	Y	
CSA N288.8	Establishing and Implementing Action Levels for Release to the Environment from Nuclear Facilities	17	Site Preparation	Y	
CSA N289.1	General Requirements for Seismic Design and Qualification of CANDU Nuclear Power Plants	08	Site Evaluation	Y	Superseded by CSA N289.1-18.
CSA N289.2	Ground Motion Determination for Seismic Qualification of Nuclear Power Plants	10	Site Evaluation	Y	See Table A-1.
CSA N289.3	Design Procedures for Seismic Qualification of Nuclear Power Plants	10	Site Evaluation	Y	
CSA N290.7	Cyber Security for Nuclear Power Plants and Small Reactor Facilities	14	Site Preparation	Y	
CSA N293	Fire Protection for Nuclear Power Plants	12	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
CSA N294	Decommissioning of Facilities Containing Nuclear Substances	09	Both	N	See Table A-1.
CSA N1600	General Requirements for Nuclear Emergency Management Programs	16	Both	Y	
IAEA NS-R-3	Site Evaluation for Nuclear Installations	Rev 1, 2016	Site Evaluation	Y	See Table A-1.
IAEA GS-R-2	Preparedness and Response for a Nuclear or Radiological Emergency	2002	Site Evaluation	Y	See Table A-1.
IAEA NS-G-1.5	External Events Excluding Earthquakes in the Design of Nuclear Power Plants	2003	Site Evaluation	N	Would have been available at the time of original application.
IAEA NS-G-3.1	External Human Induced Events in Site Evaluation for Nuclear Power Plants	2002	Site Evaluation	N	See Table A-1.
IAEA NS-G-3.2	Dispersion of Radioactive Material in Air and Water and Consideration of Population Distribution in Site Evaluation for Nuclear Power Plants	2002	Site Evaluation	N	See Table A-1.
IAEA NS-G-3.6	Geotechnical Aspects of Site Evaluations and Foundations for Nuclear Power Plants	2004	Site Evaluation	N	See Table A-1.
IAEA GS-G-3.1	Application of the Management System for Facilities and Activities	2006	Both	N	Referenced as supporting information only in REGDOC 1.1.1. OPG will ensure that management system addresses N286-12. No further assessment required.

REGDOC 1.1.1 Referenced Codes, Standards and Practices			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
IAEA GS-G-3.5	The Management System for Nuclear Installations	2009	Both	N	Referenced as supporting information only in REGDOC 1.1.1. OPG will ensure that management system addresses N286-12. No further assessment required.
IAEA RS-G-1.8	Environmental and Source Monitoring for Purposes of Radiation Protection	2005	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Is addressed through N288.4. No further assessment required.
IAEA SSG-9	Seismic Hazards in Site Evaluation for Nuclear Installations	2010	Site Evaluation	Y	See Table A-1.
IAEA SSG-18	Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations	2011	Site Evaluation	Y	See Table A-1.
IAEA SSG-21	Volcanic Hazards in Site Evaluation for Nuclear Installations	2012	Site Evaluation	Y	
IAEA WS-G-2.3	Regulatory Control of Radioactive Discharges to the Environment	2000	Site Preparation	N	Referenced as supporting information only in REGDOC 1.1.1. Is addressed through N288 series of standards. Note that this document is superseded by IAEA GSG-9. OPG is not planning to conduct radioactive work as part of Site Preparation activities. Therefore, control of radioactive discharges to the environment is not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures to monitor radiological effluents under OPG-PROG-0005 Environmental Management System. No further assessment required.
IAEA GSR Part 2	Leadership and Management for Safety: General Safety Requirements	2016	Both	N	Referenced as supporting information only in REGDOC 1.1.1. OPG will ensure that management system addresses N286-12. No further assessment required.
ICRP 68	Dose Coefficients for Intakes of Radionuclides by Workers	1994	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
ICRP 72	Age-dependent Doses to the Members of the Public from Intake of Radionuclides – Part 5, Compilation of Ingestion and Inhalation Coefficients	1995	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
ICRP 108	Environmental Protection – the Concept and Use of Reference Animals and Plants	2008	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
NFPA 1141	Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural and Suburban Areas	2017	Site Evaluation	N	Referenced as “where applicable” only in REGDOC 1.1.1 DNNP site is located adjacent to the existing DNGS and has a variety of fire protection infrastructure resources available from OPG on site and the Municipality of Clarington. In addition, it is subject to limited wildland fire potential with the property being bounded primarily by “developed” land. In addition, OPG has committed to ensuring the development of a Fire Prevention and Response Plan (see D-P-5.3 in [R-4]) prior to commencement of Site Preparation activities. No further assessment required.
NFPA 1142	Standard on Water Supplies for Suburban and Rural Fire Fighting	2017	Site Evaluation	N	
NFPA 1143	Standard for Wildland Fire Management	2018	Site Evaluation	N	
NFPA 1144	Standard for Reducing Structure Ignition Hazards from Wildland Fire	2018	Site Evaluation	N	
ISO 14001	Environmental Management System	2015	Site Preparation	N	See Table A-1.
ISO 27002	Information Technology – Security Techniques – Code of Practice for Information Security Controls	2013	Site Preparation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
NUREG/CR-7046, PNNL-20091	Design Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America	2011	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
NUREG/CR-7005	Technical Basis for Regulatory Guidance on Design-Basis Hurricane Wind Speeds for Nuclear Power Plants	2011	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
NRC Regulations 10 CFR	Appendix A to Part 100 – Seismic and Geologic Siting Criteria for Nuclear Power Plants		Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Addressed through CSA N289.2. No further assessment required.
Environment Canada	Environmental Codes of Practice for Steam Electric Power Generation: Siting Phase	1987	Site Evaluation	N	In EIS OPG stated that document is only applicable to the selection of a site, OPG has already selected DNNP site therefore this document is not applicable. No further assessment required.
Environment Canada	Environmental codes of practice for steam electric power generation: construction phase	1989	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. In EIS stated we would consider at Licence to Construct stage. No further assessment required.

REGDOC 1.1.1 Referenced Codes, Standards and Practices			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
Environment Canada	A framework for ecological risk assessment at contaminated sites in Canada: review and recommendations	1994	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Would be addressed through CSA N288.6. No further assessment required.
Environment Canada	Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities	2005	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. OPG has committed to ensure best practices will be considered/incorporated into the Nuisance Effects (Dust and Noise) Plan which will be provided to the CNSC and Municipality of Clarington no later than 3 months prior to commencement of PRSL activities (See D-P-3.2 in [R-4]). No further assessment required.
Environment and Climate Change Canada	Metal Mining Technical Guidance on Environmental Effects Monitoring	2012	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
EPA QA/G-5S	EPA Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan	2002	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
EPA-540-R-05-012	Contaminated Sediment Remediation Guidance for Hazardous Waste Sites	2005	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
U.S. EPA, Federal Guidance Report No. 12	External Exposure to Radionuclides in Air, Water, and Soil	1993	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
EPA	Defining and Assessing Adverse Environmental Impact from Power Plant Impingement and Entrainment of Aquatic Organisms	2003	Site Evaluation	N	Considered as part of Condenser Cooling Water BATEA work and hasn't changed since. No further assessment required.
CCME	A Framework for Ecological Risk Assessment: General Guidance	1996	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
CCME	A Framework for Ecological Risk Assessment: Technical Appendices	1997	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
CCME	Canadian Environmental Quality Guidelines	1999-2016	Site Evaluation	Y	Was Used in EIS and Supporting TSDs for DNNP. Doesn't look like a newer edition has been issued. Incremental Review only looking for changes.
US Fish and Wildlife Service	Habitat Suitability Index Models: Lake trout (exclusive of the Great Lakes)	1984	Site Evaluation	N	This reference is for Lake Trout that reside outside of the Great Lakes, therefore it is not applicable for DNNP. No review required.
Journal Paper	Assessing the ecological effects of habitat change: moving beyond productive capacity	1996	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
Ontario Ministry of Environment	Operations Manual for Air Quality Monitoring in Ontario	2008	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
Ontario Ministry of Environment	Air Dispersion Modelling Guideline for Ontario	2017	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
Ontario Ministry of Environment	Guidelines for Identifying, Assessing and Managing Contaminated Sediments in Ontario	2008	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
CEAA	Incorporating climate change considerations in environmental assessment: general guidance for practitioners	2003	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
CEAA	Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012	2015	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
Canadian Dam Association	Dam Safety Guidelines 2007 (2013 Edition)	2013	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. OPG committed to considered Dam Safety Guidelines as part of confirmatory geotechnical program (see D-P-9 in [R-4]). No further assessment required.

REGDOC 1.1.1 Referenced Codes, Standards and Practices			Applicable to Site Evaluation/Site Preparation/Both	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
IAEA TECDOC-1657,	Design Lessons Drawn from the Decommissioning of Nuclear Facilities	2011	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Addressed through G-219 and N294. No further assessment required.
NEA/OECD	Applying Decommissioning Experience to the Design and Operation of New Nuclear Power Plants	2010	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Addressed through G-219 and N294. No further assessment required.
NEA/OECD	Decommissioning Considerations for New Nuclear Power Plants	2010	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. Addressed through G-219 and N294. No further assessment required.
Health Canada H46-2/03-326E	Canadian Guidelines for Intervention During a Nuclear Emergency	2003	Site Evaluation	Y	Only review changes between this and 2003 Canadian Guidelines for Intervention During a Nuclear Emergency, as referenced document is superseding document used in EIS work.
Environment Canada / Health Canada	Priority Substances List Assessment Report. Releases of radionuclides from nuclear facilities (impact on non-human biota)	2006	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
DFO	Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters	1998	Site Evaluation	N	Used in EIS work and document has not changed since, therefore no further assessment required.
EPRI	Impingement Abundance Monitoring Technical Support Document	2004	Site Evaluation	N	Considered as part of Condenser Cooling Water BATEA work and hasn't changed since. No further assessment required.
EPRI	Entrainment Abundance Monitoring Technical Support Document	2014	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
University of Saskatchewan	2013 Canadian Exposure Factors Handbook	2013	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
Journal Paper	Using an Ecosystem Approach to complement protection schemes based on organism-level endpoints	2014	Site Evaluation	N	Referenced as supporting information only in REGDOC 1.1.1. No further assessment required.
Government of Canada	Canadian Climate Normals	Webpage	Site Evaluation	Y	
Canadian Geotechnical Society	Canadian Foundation Engineering Manual	4th ed. 2006	Site Evaluation	N	Used in Site Evaluation work and document has not changed since, therefore no further assessment required.

Table A-3: List of Current CNSC Regulatory Framework Documents (As of Freeze Date, see 4.1.1.1)

List of CNSC Regulatory Framework Documents as of Freeze Date			Applicable to Site Evaluation/Site Preparation/Both/Neither	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
REGDOC 1.1.1	Site Evaluation and Site Preparation for New Reactor Facilities	2018	Both	Y	See Table A-1.
RD/GD-369	Licence Application Guide: Licence to Construct a Nuclear Power Plant	2011	Site Preparation	Y	See Table A-2.
REGDOC 1.1.3	Licence Application Guide: Licence to Operate a Nuclear Power Plant	2017	Neither	N	Not within scope of Licence Application.
R-72	Geological Considerations in Siting a Repository for Underground Disposal of High-Level Radioactive Waste	1987	Neither	N	Not within scope of Licence Application.
G-218	Preparing Codes of Practice to Control Radiation Doses at Uranium Mining and Mills	2003	Neither	N	Not within scope of Licence Application.
RD/GD-120	Licence Application Guide : Radio Therapy	2010	Neither	N	Not within scope of Licence Application.
RD/GD-207	Licence Application Guide: Service Class II Prescribed Equipment	2011	Neither	N	Not within scope of Licence Application.
RD/GD-289	Licence Application Guide: Class II Non-radiotherapy Accelerator Facilities	Version 2, 2012	Neither	N	Not within scope of Licence Application.
REGDOC 1.5.1	Application Guide: Certification of Radiation Devices or Class II Prescribed Equipment	2018	Neither	N	Not within scope of Licence Application.
REGDOC 1.6.1	Licence Application Guide: Nuclear Substance and Radiation Devices	Version 2, 2017	Neither	N	Not within scope of Licence Application.
G-121	Radiation Safety in Educational, Medical and Research Institutions	2000	Neither	N	Not within scope of Licence Application.
REGDOC 2.1.2	Safety Culture	2018	Site Preparation	Y	
P-119	Policy on Human Factors	2000	Both	N	Policy Document.
REGDOC 2.2.2	Personnel Training	Version 2, 2016	Site Preparation	Y	
REGDOC 2.2.3	Personnel Certification: Radiation Safety Officers	2014	Neither	N	Not within scope of Licence Application.
RD-204	Certification of Persons Working at Nuclear Power Plants	2008	Neither	N	Not within scope of Licence Application.
REGDOC 2.2.3	Personnel Certification: Exposure Device Operators	2017	Neither	N	Not within scope of Licence Application.
REGDOC 2.2.4	Fitness for Duty: Volume I: Managing Work Fatigue	2017	Site Preparation	N	See Table A-2.
REGDOC 2.2.4	Fitness for Duty: Volume II: Managing Alcohol and Drug Use	Version 2, 2017	Site Preparation	N	See Table A-2.
REGDOC 2.2.4	Fitness for Duty: Volume III: Security Officer Medical, Physical and Psychological Fitness	2018	Site Preparation	N	See Table A-2. (under RD-363)
G-323	Ensuring the Presence of Sufficient Qualified Staff at Class I Nuclear Facilities – Minimum Staff Complement	2007	Neither	N	Not within scope of Licence Application. Note Superseded by REGDOC 2.2.5 in 2019. After freeze date.
REGDOC 2.3.1	Conduct of Licensed Activities: Construction and Commissioning Programs	2016	Site Preparation	Y	
REGDOC 2.3.2	Accident Management	Version 2, 2015	Neither	N	Not within scope of Licence Application.

List of CNSC Regulatory Framework Documents as of Freeze Date			Applicable to Site Evaluation/Site Preparation/Both/Neither	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
REGDOC 2.3.3	Periodic Safety Reviews	2015	Neither	N	Not within scope of Licence Application.
REGDOC 2.4.1	Deterministic Safety Analysis	2014	Site Evaluation	N	Addressed only if required through review of applicable sections of REGDOC 2.5.2.
REGDOC 2.4.2	Probabilistic Safety Assessment for Nuclear Power Plants	2014	Site Evaluation	N	Addressed only if required through review of applicable sections of REGDOC 2.5.2.
REGDOC 2.4.3	Nuclear Criticality Safety	2018	Site Evaluation	Y	See Table A-2.
G-276	Human Factors Engineering Program Plans	2003	Neither	N	Not within scope of Licence Application. Superseded by REGDOC 2.5.1 which was published after freeze date.
G-278	Human Factors Verification and Validation Plans	2003	Neither	N	Not within scope of Licence Application. Superseded by REGDOC 2.5.1 which was published after freeze date.
REGDOC 2.5.2	Design of Reactor Facilities: Nuclear Power Plants	2014	Both	Y	See Table A-1.
RD-367	Design of Small Reactor Facilities	2011	Both	N	N/A. RD-337 was used in original application.
REGDOC 2.5.4	Design of Uranium Mines and Mills: Ventilation Systems	2018	Neither	N	Not within scope of Licence Application.
REGDOC 2.5.5	Design of Industrial Radiography Installations	2018	Neither	N	Not within scope of Licence Application.
GD-52	Design Guide for Nuclear Substance Laboratories and Nuclear Medicine Rooms	2010	Neither	N	Not within scope of Licence Application.
REGDOC 2.5.7	Design, Testing and Performance of Exposure Devices	2017	Neither	N	Not within scope of Licence Application.
REGDOC 2.6.1	Reliability Programs for Nuclear Power Plants	2017	Neither	N	Not within scope of Licence Application.
REGDOC 2.6.2	Maintenance Programs for Nuclear Power Plants	2017	Neither	N	Not within scope of Licence Application.
REGDOC 2.6.3	Aging Management	2014	Neither	N	Not within scope of Licence Application.
G-121	Radiation Safety in Educational, Medical and Research Institutions	Rev 1, 2000	Neither	N	Not within scope of Licence Application.
G-129	Keeping Radiation Exposure and Doses “As Low As Reasonably Achievable”	2004	Neither	N	OPG is not planning to conduct radioactive work as part of Site Preparation activities. Therefore, not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures under N-PROG-RA-0013 Radiation Protection. No further assessment required.
G-228	Developing and Using Action Levels	2001	Neither	N	See Table A-2.
G-313	Radiation Safety Training Programs for Workers Involved in Licensed Activities with Nuclear Substances and Radiation Devices, and with Class II Nuclear Facilities and Prescribed Equipment	2006	Neither	N	Not within scope of Licence Application.
GD-150	Designing and Implementing a Bioassay Program	2010	Neither	N	OPG is not planning to conduct radioactive work as part of Site Preparation activities. Therefore, not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures under N-PROG-RA-0013 Radiation Protection. No further assessment required.
G-91	Ascertaining and Recording Doses to Individuals	2003	Neither	N	
G-147	Radiobioassay Protocols for Responding to Abnormal Intakes of Radionuclides	2003	Neither	N	
RD-58	Thyroid Screening for Radioiodine	2008	Neither	N	

List of CNSC Regulatory Framework Documents as of Freeze Date			Applicable to Site Evaluation/Site Preparation/Both/Neither	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
S-260	Making Changes to Dose-Related Information Filed with the National Dose Registry	2004	Neither	N	OPG is not planning to conduct radioactive work as part of Site Preparation activities. Therefore, not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures under N-PROG-RA-0013 Radiation Protection. No further assessment required.
S-106	Technical and Quality Assurance Requirements for Dosimetry Services	Rev.1, 2006	Neither	N	
REGDOC 2.7.3	Radiation Protection Guidelines for the Safe Handling of Decedents	2018	Neither	N	
REGDOC 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures	Version 1.1, 2017	Both	Y	See Table A-1.
REGDOC 2.10.1	Nuclear Emergency Preparedness and Response	Version 2, 2017	Both	Y	See Table A-2.
REGDOC 2.11	Framework for Radioactive Waste Management and Decommissioning in Canada	2018	Neither	N	OPG is not planning to generate radioactive work as part of Site Preparation activities. Therefore, not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures under W-PROG-WM-0001 Nuclear Waste Management. No further assessment required.
REGDOC 2.11.1	Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings	2018	Neither	N	Not within scope of Licence Application.
REGDOC 2.11.1	Waste Management, Volume III: Assessing the Long-Term Safety of Radioactive Waste Management	2018	Neither	N	OPG is not planning to generate radioactive work as part of Site Preparation activities. Therefore, not applicable to the DNNP PRSL at this time. If required, OPG maintains procedures under W-PROG-WM-0001 Nuclear Waste Management. No further assessment required.
G-219	Decommissioning Planning for Licensed Activities	2000	Both	N	See Table A-1.
REGDOC 2.12.1	High Security Facilities, Volume I: Nuclear Response Force	Version 2, 2018	Neither	N	Not within scope of Licence Application.
REGDOC 2.12.1	High Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices	2018	Site Preparation	Y	See Table A-2 (RD 321 and RD 361)
REGDOC 2.12.2	Site Access Security Clearance	2013	Site Preparation	Y	See Table A-2.
REGDOC 2.12.3	Security of Nuclear Substances: Sealed Sources	2013	Both	N	See Table A-2.
G-208	Transportation Security Plans for Category I, II or III Nuclear Material	203	Neither	N	Not within scope of Licence Application.
G-274	Security Programs for Category I or II Nuclear Material or Certain Nuclear Facilities	2003	Site Preparation	N	See Table A-2.
REGDOC 2.13.1	Safeguards and Nuclear Material Accountancy	2018	Neither	N	Not within scope of Licence Application.
REGDOC 2.13.2	Import and Export	Version 2, 2018	Site Preparation	N	See Table A-2.
REGDOC 2.14.1	Information Incorporated by Reference in Canada's Packaging and Transport of Nuclear Substances Regulations	2016	Neither	N	Not within scope of Licence Application.
REGDOC 2.14.1	Volume II: Radiation Protection Programs Design for the Transport of Nuclear Substances	2018	Neither	N	Not within scope of Licence Application.
RD-364	Joint Canada-US Guide for Approval of Type B(U) and Fissile Material Transportation Packages	2009	Neither	N	Not within scope of Licence Application.
REGDOC 3.1.1	Reporting Requirements for Nuclear Power Plants	2016	Site Preparation	Y	
REGDOC 3.1.2	Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills	2018	Neither	N	Not within scope of Licence Application.

List of CNSC Regulatory Framework Documents as of Freeze Date			Applicable to Site Evaluation/Site Preparation/Both/Neither	Further Assessment?	
Document Number	**Document Title**	**Edition/Version/Issue Date**		**Y/N**	**Comment**
REGDOC 3.2.1	Public Information and Disclosure	2018	Site Preparation	Y	See Table A-1.
REGDOC 3.2.2	Aboriginal Engagement	2016	Site Preparation	Y	See Table A-2.
G-206	Financial Guarantees for the Decommissioning of Licensed Activities	2000	Site Preparation	N	See Table A-1.
REGDOC 3.4.1	Guide for Applications and Interveners Writing CNSC Commission Member Documents	2017	Both	N	Only applies to the actual submission and not the activities supporting the licence application.