GE VERNOVA

HITACHI

~~Proprietary Notice~~

~~This letter transmits proprietary information.~~ Upon the removal of Enclosure 1, the balance of the letter may be considered non-proprietary.

Suzanne Karkour

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M260002
February 4, 2026

Docket Number: 99900003

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

ATTN : Michele Sampson, Director, Division of New and Renewed Licenses, NRR, USNRC

Subject: White Paper – Justification that Installation of Certain Structures, Systems, and Components for a BWRX-300 are Preconstruction Activities

Enclosed is a White Paper regarding the justification that installation of certain structures, systems, and components for a BWRX-300 are preconstruction activities that do not require prior NRC approval.

Enclosure 1 contains proprietary information of the type that GE Vernova Hitachi Nuclear Energy Americas, LLC (GVH) maintains in confidence and withholds from public disclosure. The affidavit contained within Enclosure 3 identifies that the information contained in Enclosure 1 has been handled and classified as proprietary to GVH. GVH hereby requests that the information in Enclosure 1 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 9.17. Upon removal of Enclosure 1, the remainder of this submittal is non-proprietary.

If you have any questions, please contact me at +1 289-385-1935.

Sincerely,

Suzanne Karkour
Vice President, New Power Plant and Product Licensing
GE Vernova Hitachi Nuclear Energy Americas, LLC
GE Vernova Hitachi SMR Technologies Canada, Ltd

Enclosures:

1. White Paper - Justification that Installation of Certain Structures, Systems, and Components for a BWRX-300 are Preconstruction Activities, GVH - Proprietary Information - Non-Public
2. White Paper - Justification that Installation of Certain Structures, Systems, and Components for BWRX-300 are Preconstruction Activities, GVH - Non-Proprietary Information
3. Affidavit, GVH - Non-Proprietary Information

cc: Mahmoud Jardeneh, USNRC
Stacy Joseph, USNRC
Michelle Catts, GVH
Suzanne Karkour, GVH
Michael Hamer, GVH

PLM Specification – 010N7837 Revision 0

Document Components:
001 M260002 Cover Letter.pdf
002 M260002 Enclosure 1 Proprietary.pdf
003 M260002 Enclosure 2 Non-Proprietary.pdf
004 M260002 Enclosure 3 Affidavit Non-Proprietary.pdf

ENCLOSURE 2

M260002

White Paper
Justification that Installation of Certain Structures, Systems, and Components for a BWRX-300 are Preconstruction Activities
[[ ]]
GVH Non-Proprietary Information

IMPORTANT NOTICE

This is a non-proprietary version of Enclosure 1, from which the proprietary information has been removed. Portions of the enclosure that have been removed are indicated by an open and closed bracket as shown here [[ ]].

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this white paper is to request feedback from the U.S Nuclear Regulatory Commission (NRC) regarding the GE Vernova Hitachi Nuclear Energy Americas LLC (GVH) justification that installation of certain Structures, Systems, and Components (SSCs) for a BWRX-300 does not constitute "construction" as defined in 10 CFR 50.10(a)(1).

This white paper presents the justification for installing [[ ]] of a BWRX-300 as a permissible preconstruction activity prior to issuance of a Construction Permit (CP) or Combined License (COL) and therefore does not require a Limited Work Authorization (LWA) or Exemption to NRC requirements. Preconstruction activities do not require prior NRC approval to proceed. The proposed activity constitutes site preparation and [[ ]] work and does not represent construction of a safety-related structure under 10 CFR 50.10.

Consistent with NRC regulations, precedent and recent Commission guidance in SECY-25-0074, the installation of [[ ]] does not limit NRC authority over the final RB foundation or structure design.

1.2 Scope

This document includes the following:

- A general description of the BWRX-300, including description of the [[ ]]
- A technical evaluation describing the installation of [[ ]]
- A regulatory evaluation addressing NRC regulatory requirements and guidance. This includes proposed content for a Licensing Topical Report (LTR) that can be incorporated by reference by future applicants for CPs or COLs.

2.0 BWRX-300 GENERAL DESCRIPTION

The BWRX-300 is an approximately 300 MWe, water-cooled, natural circulation Small Modular Reactor (SMR) utilizing simple passive safety systems driven by natural phenomena. It is designed by GVH for deployment in the United States and internationally. It is the tenth generation of the Boiling Water Reactor (BWR) and is an evolution of the NRC-certified design for the 1,520 MWe Economic Simplified Boiling Water Reactor (ESBWR).

The BWRX-300 RB contains the Reactor Pressure Vessel (RPV) and houses the main function of steam generation. It is separated from the rest of the surrounding power block structures by seismic gaps, limiting the physical interaction between the RB and power block structures during a seismic event.

3.0 TECHNICAL EVALUATION

3.1 Reactor Building

The RB is classified as a Seismic Category 1, Safety Class 1 (SC1) structure according to the BWRX-300 Safety Strategy. This is equivalent to a Seismic Category I, Safety-Related structure in NRC terminology. The primary functions of the RB are as follows:

- The RB houses and structurally supports the containment structure, the RPV, the reactor support structure of the primary reactor system and fuel handling equipment, biological shielding, and associated equipment and structures
- The RB provides adequate space for the operation, maintenance, and removal of equipment housed within the Containment structure during periodic maintenance
- The RB provides protection for safety equipment from environmental and natural hazards phenomena, such as floods, winds, tornadoes, and earthquakes
- The RB provides protection for safety equipment from external hazards, such as explosions and missiles from nearby transportation/industry or aircraft impact

3.2 Reactor Building Shaft

The BWRX-300 RB is placed in a vertical right-cylinder shaft and located below-grade to mitigate the effects of possible external events, including aircraft crashes, adverse weather, flooding, fires, and earthquakes. The BWRX-300 design employs a deeply embedded reactor building, which is different than traditional, large light water reactor designs. Advanced construction methods are used for the RB below-grade vertical shaft to reduce the construction cost and schedule by minimizing the amount of excavation, concrete, and the use of engineered backfill materials. [[

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3.3 [[ ]]

[[

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4.0 REGULATORY EVALUATION

4.1 NRC Regulatory Requirements and Guidance

The following regulatory requirements and guidance are applicable to construction activities for a BWRX-300 installation. Activities classified as preconstruction do not require prior NRC approval. Activities classified as construction do require NRC approval, by either a CP, COL, LWA, or Exemption to regulatory requirements.

4.1.1 10 CFR 50.10

10 CFR 50.10: License Required; Limited Work Authorization provides the regulatory definition of those activities that are considered construction and preconstruction.

10 CFR 50.10(a)(1) specifies those activities that constitute construction and require NRC approval prior to commencing. These include driving of piles, subsurface preparation, placement of backfill, concrete or permanent retaining walls within an excavation, installation of foundations or in-place assembly, erection, fabrication, or testing, which are for:

- Safety-related structures, systems, or components (SSCs) of a facility
- SSCs relied upon to mitigate accidents of transients or used in plant operating procedures
- SSCs whose failure could prevent safety-related SSCs from fulfilling their safety-related function
- SSCs whose failure could cause a reactor scram or actuation of a safety-related system, and
- SSCs necessary to comply with security or emergency preparedness requirements.

10 CFR 50.10(a)(2) specifies those activities that are considered “not construction” and therefore do not require NRC approval to proceed. These include:

- Site exploration
- Site preparation, including clearing, grading, installation of drainage, erosion, and other environmental mitigation measures, and construction of temporary roads and borrow areas
- Erection of fences and other access control measures
- Excavation
- Erection of support buildings (such as construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility
- Building of service facilities, such as paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines, and
- Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility.

4.1.2 SECY 25-0074

SECY-25-0074: Expedited Construction of Certain Structures, Systems, and Components provides the NRC staff's strategy for allowing current and potential applicants to build or install SSCs that do not have a reasonable nexus to radiological health safety and/or the common defense and security without prior NRC approval.

4.2 Justification

The installation of [[

]] SECY-25-0074 does not explicitly require evaluation of impacts on licensing alternatives or NRC oversight. However, GVH evaluated the proposed [[ ]] against the underlying principles of 10 CFR 50.10 and NRC construction precedent and determined that the activity does not limit NRC authority over final RB foundation or structure design, nor does it preclude reasonable licensing outcomes.

Therefore, installation of [[ ]] can be treated as preconstruction excavation which does not require NRC approval.

4.3 Licensing Topical Report Content

An LTR will be prepared which will combine the evaluation contained in this white paper, along with that of other white papers to be submitted for other BWRX-300 preconstruction determinations. Table 1 shows the planned preconstruction activities for a typical BWRX-300 installation which do not require NRC pre-approval. These activities will not be included in the LTR. Table 2 shows the potential preconstruction activities to be presented in a series of white papers which will provide the justifications for considering them to qualify as preconstruction. These activities will be included in the LTR.

The LTR will describe the methodology, or decision logic, that is used to determine which activities are classified as preconstruction. [[

]]

It is intended that once the LTR is approved by the NRC, it can be incorporated by reference by BWRX-300 applicants. This will facilitate the performance of justified preconstruction activities without the need for a CP, COL, LWA or exemption to NRC requirements. As a result, NRC required reviews and approvals, along with associated review time, will be minimized, thereby improving regulatory efficiency. It will also result in time and cost savings associated with construction of BWRX-300 plants.

4.4 Environmental Considerations

All preconstruction activities taking place at a plant site are subject to applicable federal, state, and local environmental permitting requirements. The environmental effects of preconstruction activities will be included when considering cumulative environmental impacts of plant

construction to support the NRC's development of EISs, and its responsibilities under the National Environmental Policy Act (NEPA) of 1969.

5.0 CONCLUSION

The installation of [[ ]] is a preconstruction site-preparation and [[ ]] activity**,** not construction of a SC1 (or safety-related) structure under 10 CFR 50.10. [[ ]] The RB foundation and structure will only be constructed after issuance of a CP or COL. Early installation of [[ ]] while remaining fully compatible with the NRC licensing process.

Table 1: BWRX-300 Planned Preconstruction Activities (NRC approval not required)

Category	Activity	Preconstruction Justification
[[		
]]		

Table 2: BWRX-300 Potential Preconstruction Activities

(to be described in white papers and included in LTR)

Category	Activity	Justification
[[		

Category	Activity	Justification
		]]

ENCLOSURE 3

M260002

Affidavit

GE Vernova Hitachi Nuclear Energy Americas, LLC

AFFIDAVIT

I, **Suzanne Karkour,** state as follows:

(1) I am Vice President, New Power Plant and Product Licensing, GE Vernova Hitachi Nuclear Energy Americas, LLC (GVH), and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in M260002, "White Paper – Justification that Installation of Certain Structures, Systems, and Components for a BWRX-300 are Preconstruction Activities". GVH proprietary text is identified by dotted underline within double square brackets. [[This sentence is an example.{3}]] Figures and large objects containing GVH proprietary information are identified with double square brackets before and after the object. In all cases, the superscript notation {3} refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.

(3) In making this application for withholding of proprietary information of which it is the owner or licensee:

(a) In the United States, GVH relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and Nuclear Regulatory Commission (NRC) regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F2.d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F2.d 1280 (DC Cir. 1983).

(4) In the United States, some examples of categories of information which fit into the definition of proprietary information in (3)(a) above are:

(a) Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GVH's competitors without license from GVH constitutes a competitive economic advantage over other companies;

(b) Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;

(c) Information which reveals aspects of past, present, or future GVH customer–funded development plans and programs, resulting in potential products to GVH;

(d) In the U.S., information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)(a) through (4)(d) above.

(5) To address the U.S. requirements in 10 CFR 2.390(b)(4) requirements, the information sought to be withheld is being submitted to the NRC in confidence. The information is of a sort customarily held in confidence by GVH and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GVH, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or subject to the terms under which it was licensed to GVH.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GVH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information identified in paragraph (2) is classified as proprietary because it contains preliminary proprietary design information for BWRX-300 systems and components, and regulatory acceptance criteria intended to be used for the safety analysis of the BWRX-300. The development of the preliminary proprietary design information for systems and components and proposed regulatory acceptance criteria for this new reactor technology was achieved at a significant cost to GVH.

The development of the evaluation process for this new reactor technology design, along with the interpretation and application of the regulatory acceptance criteria, is derived from the extensive experience database that constitutes a major GVH asset.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GVH's competitive position and foreclose or reduce the availability of profit–making opportunities. The development of this new reactor technology is part of GVH's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC–approved methods.

The research, development, engineering, analytical, and NRC review costs for this reactor technology comprise a substantial investment of time and money by GVH.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology to a new reactor technology is difficult to quantify, but it clearly is substantial.

GVH's competitive advantage will be lost if its competitors are able to use the results of the GVH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GVH would be lost if the information were disclosed to the public. Making such information available to competitors without these competitors having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall and deprive GVH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing this very valuable reactor technology.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 4th day of February 2026.

Suzanne Karkour

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