NRC Pre-Application Public Meeting

Introduction & Design Overview of Advanced Float's Offshore Floating Nuclear Power Plant

November 5, 2026 | NRC Headquarters, Rockville, MD (hybrid) | Docket No. 99902176

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Meeting Agenda

Partially closed pre-application meeting, 2:00–3:00 PM EST

OPEN SESSION 2:00–2:30 PM

2:00 Opening remarks and introductions — NRC

2:05 Advanced Float: company, plant concept and regulatory approach (15 min) — AFC

2:20 Question and answer exchange — NRC / AFC

2:25 Public comment period — NRC facilitated

2:30 Open portion concludes

CLOSED SESSION 2:30–3:00 PM

Status of the Japan–U.S. government procedures for sharing nuclear information, and what they mean for the timing of our technical submittals

Arrangements for referencing the certified ABWR design

Questions for NRC staff feedback

Closed-session slides are provided separately, marked for withholding under 10 CFR 2.390. No design proprietary information is presented today.

Who We Are — Advanced Float Co., Ltd.

Owner and operator of offshore floating nuclear power plants

- Founded February 2024 in Tokyo, Japan. Our purpose is to license, build, own and operate offshore floating nuclear power plants, beginning with a first-of-a-kind (FOAK) plant in U.S. waters.

- Founder: 40 years at Tokyo Electric Power Company — Fukushima Daiichi operations and core design, ABWR design and licensing with GE and Japanese manufacturers, and chief nuclear officer after the 2011 accident.

  Licensed Chief Reactor Engineer and Professional Engineer (Nuclear) in Japan.

- Team: U.S. advisors in regulatory, security and naval nuclear engineering; Japanese experts in BWR safety design, marine engineering and nuclear operations; counsel in Tokyo and Washington.

- Our safety proposition: we carry the lessons of Fukushima Daiichi personally.
  We intend to propose safety enhancements that come directly from that experience — and to keep improving them, more today than yesterday, more tomorrow than today.



Why Offshore — Lessons Learned from Fukushima Daiichi

Many things went wrong in March 2011. Three were decisive, and all three are removed or made far smaller by siting the plant at sea.

Earthquake and tsunami cut all power

The earthquake cut off-site power.

The 14-m tsunami then overtopped the seawall and flooded the emergency power and switchgear.

Offshore, the water decouples the plant from ground motion, so the seismic load is far smaller;

in deep water the tsunami is a long, low wave that a moored platform rides over.

Loss of cooling, and of water itself

With AC power lost, decay heat could not be removed for days.

The earthquake had also broken the water sources on site, so there was no water to inject even when pumps could be improvised.

Defense in depth: large fresh-water reserves carried inside the floating platform; and, if those are ever exhausted, the sea itself — an unlimited heat sink that removes decay heat without any power.

The plant is designed so that a station blackout does not lead to core damage.

Evacuation of residents

About 73,000 people were evacuated from the surrounding towns.

Radiation doses to residents were small, but the evacuation itself cost lives: many hospital patients and elderly residents died from the strain of hurried relocation.

Our site is well offshore — more than 20 km (about 12 nautical miles) from land, inside territorial waters, not moored in a harbour. The nearest residents are more than 20 km away; the extent of protective actions will be set by dose assessment.

The Answer — Two Proven Technologies, Combined

An idea proposed by MIT professors after they visited the Fukushima Daiichi site in the aftermath of the accident

Offshore floating structure



Illustrative image of an FPSO (AI-generated)

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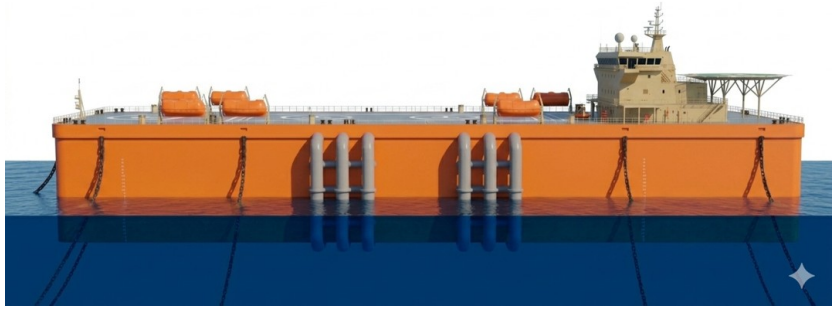
Light-water reactor (ABWR)



Kashiwazaki-Kariwa Units 5–7 (Units 6 & 7: ABWR)
— Source: TEPCO Holdings

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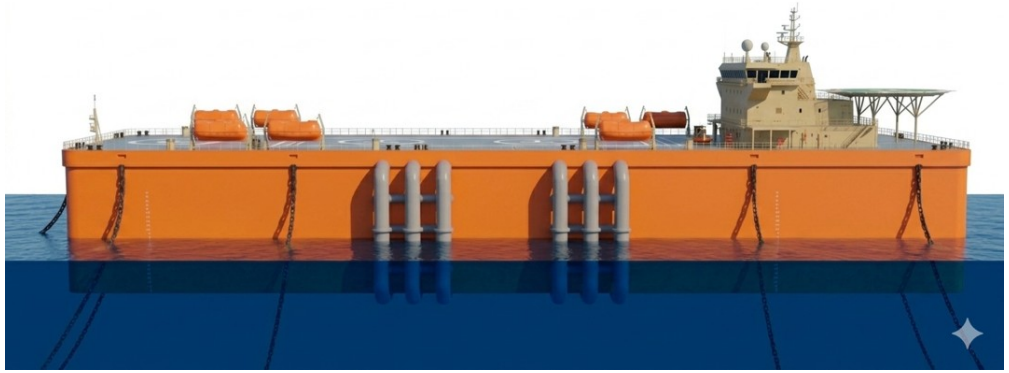
Offshore floating nuclear power plant



Conceptual image of the OFNP — Advanced Float Co., Ltd.

- The floating structure: a type of structure designed and built at this scale for decades. The reactor: the ABWR, conceived by GE in the United States and completed and proven with Japanese manufacturers and utilities; NRC design certification since 1997.
- An American idea that we are carrying forward: the first unit is built in Japan, the only country that has built and operated ABWRs, and licensed, owned and operated in the United States.

The Plant Concept — ABWR on a Stationary, Rigid Floating Platform



- Reactor: the U.S.-certified ABWR (~1,350 MWe gross), with severe-accident hardening added
- Platform: rigid steel floating structure, treated as a building-equivalent structure, not as a ship. Rigid so the reactor keeps its land-like foundation and the certified design basis is preserved
- Stationary, non-self-propelled, spread-moored well offshore (on the order of 20 km from the coast, inside U.S. territorial waters)
- Built to take a hit: multiple outer shells form a collision crush zone around the reactor island; watertight compartments with safety divisions physically separated, so a single breach cannot disable several systems at once; designed to remain afloat under the damage conditions we will define
- Nuclear modules built in factories are installed on the platform in a shipyard dock, and the completed plant is towed to its generating site without fuel

WHY A WATER REACTOR AT SEA

For a reactor at sea, a water-cooled reactor is the natural fit: the coolant inside and the ocean outside are the same substance. Decay heat can go to the sea directly — no intermediate fluid, no power — the simplest possible last line of cooling.

And the physics is forgiving: if the water heats up or boils, it moderates less and the power falls by itself.

Answers: the cooling failure, and the reactivity accident

WHY LARGE

Electricity demand is rising fast again — data centers, electrification — and it calls for gigawatt-class units.

Ten small reactors on one site hold the same fuel inventory as one large reactor, and Fukushima showed that several units in trouble at once overwhelm the same small team and delay every response. Fewer, larger units are easier to manage.

Answers: the scale of demand, and the multi-unit accident

WHY THE ABWR

Among large light-water reactors, the ABWR has the record: the newest design with real operating experience — four units in Japan since 1996, two more under construction.

Internal pumps, fine-motion control rod drives, three-division safety systems. NRC design certification since 1997, renewed in 2021.

Answers: proven in operation, and certified in the U.S.

Active and Passive, Together — Features Added to the Certified ABWR

The ABWR keeps its full set of active safety systems; we strengthen them and add passive systems on top of them, not instead of them — a further layer of defense in depth, not credited in the FOAK design basis

STRENGTHENED ACTIVE SYSTEMS

- Four physically separated safety cooling-water divisions (the certified ABWR has three) — a localized external impact, one division in maintenance and a single failure can all be absorbed at once
- Extended DC power capacity — days rather than hours, plus on-platform solar — and diversified emergency diesel generators

PASSIVE SYSTEMS ADDED

- Isolation condensers with passive seawater make-up — decay heat removal without power

RESILIENCE IF THE CORE MELTS

- Steel containment with integrated water cooling — keeps the containment wall cool under severe-accident conditions
- Filtered containment venting, two independent trains
- Nitrogen inerting and passive hydrogen recombiners retained from the ABWR design
- Core catcher below the reactor vessel — ex-vessel debris retention and cooling

Why add, rather than replace

Published ABWR risk assessments show that failure to remove decay heat dominates core-damage frequency. The isolation condensers, the cooled containment and the fourth cooling-water division target that mechanism directly.

Active systems with their pumps and diesels are proven and remain the design basis. Passive systems, once their isolation valves are opened, run on natural forces alone — no pumps, no AC power. Keeping both gives two different ways to remove decay heat; relying on one alone, however elegant, gives up a layer.

Added features are beyond-design-basis mitigation, evaluated for no adverse interaction with certified safety functions. Credit may be sought later, after operating experience. The regulatory treatment of these features will be set out in the Floating ABWR White Paper for staff feedback.

What We Will Ask the NRC to Review

Referencing the certified ABWR design and focusing the review on what is new

Referenced from the ABWR certification — applicability confirmed for the changed boundary conditions

Reactor core, fuel, reactor pressure vessel and primary systems

Design-basis accident analyses, safety classification of reactor systems

Containment pressure-suppression function and reactor safety systems

How we use Part 52

Standard Design Approval (SDA) for the platform and the added features: one design intended for several sea areas, so design approval ahead of any site

Combined License (COL) referencing the ABWR certification and the SDA for the site-specific items

New — the scope of NRC review

1. The floating platform treated as a building-equivalent structure, with graded safety classification of platform SSCs
2. Selected departures from the certified ABWR design, including the containment concept and the boundary conditions changed by the platform (motions, seawater heat sink, watertight subdivision)
3. Severe-accident features added to the certified design
4. Marine and external hazards: which land-based hazards disappear offshore, which are absorbed into the design basis, and the two that are new — vessel collision and loss of watertight integrity, both governed by established marine damage-stability practice
5. Interfaces among NRC, U.S. Coast Guard, the seabed authority and the classification society — four bodies, one plant, one integrated licensing basis
6. Fabrication outside the United States — QA flow-down to the shipyard and suppliers, and ITAAC that run from fabrication through towing to installation at the U.S. site

Regulatory Framework, Requirements and Standards

How we intend to comply, and which guidance, codes and standards we will use

Licensing path

10 CFR Part 52: SDA followed by COL, referencing the renewed ABWR design certification (Appendix A)

Part 50 Appendices A and B apply as in the certified design; departures handled under Part 52 Appendix A, Section VIII

Part 72 for a separate floating dry-storage installation for spent fuel — general license (Subpart K) if its conditions are met, otherwise a specific license

Part 73 physical protection, to be adapted to an offshore site (with the USCG security zone under MTSA)

Interagency interfaces

NRC–USCG Memorandum of Understanding (June 2026): maritime safety, vessel standards, MTSA security

NRC–MMA Memorandum of Understanding (July 2026): seabed and mooring authorization

Classification society review of the platform: we expect ABS, consistent with U.S. practice

Joint interface definition and a coordinated review schedule are early objectives

Codes and standards

NUREG-0800 SRP and applicable Regulatory Guides for the reactor and nuclear island

ASME Section III for the containment and pressure boundaries

Safety-related platform structure: ANSI/AISC N690 approach, with the relationship to classification-society rules to be resolved

Marine codes (IMO, ABS) for damage stability, collision and mooring, graded by safety significance

NQA-1 for the QA program; NEI 14-05A for commercial-grade dedication

Topics We Would Like to Resolve Early

From Section 4.4 of our Regulatory Engagement Plan (ML26257A291) — to be developed in White Papers and technical meetings

- Regulatory treatment of the floating platform as a building-equivalent structure, and graded safety classification of platform SSCs
- Relationship between the ABWR certification and FOAK departures: what to resolve in the SDA, what to defer to the COL
- Scope and methods for marine and external hazards
  — extreme waves, vessel collision, loss of watertight integrity, station-keeping
  — including how the frequency of platform loss is demonstrated and who reviews it (NRC, USCG, classification society)
- The containment departure: level of pre-application detail the staff expects for a steel containment with integrated water cooling
- Emergency planning for a large LWR at an offshore site — dose-based extent of protective actions, and the treatment of mariners and offshore workers
- Physical security and the NRC–USCG interface for an offshore site
- Spent fuel: dry storage on a separate floating installation under Part 72
- Overseas fabrication: NRC vendor-inspection access at a foreign shipyard, and how classification-society survey records may support ITAAC closure

Planned Regulatory Activities

Planning assumptions from the REP; durations are subject to the staff's review schedule

Milestone	Target (planning)	Principal deliverable
Regulatory Engagement Plan submitted	September 14, 2026	Done — public on ADAMS (ML26257A291); project number assigned
First pre-application public meeting	November 5, 2026	Today
Floating ABWR White Paper and Technical Reports	From Q4 2026	Platform classification, Tier 1/Tier 2 treatment, hazards, interfaces
NRC–USCG interface definition and coordinated review schedule	From Q4 2026	With the Coast Guard and the seabed authority
QA Program Description topical report	From Q4 2026	Appendix B / NQA-1 program
Spent-fuel storage White Paper	From Q1 2027	Offshore dry storage installation (Part 72)
Standard Design Approval application	2027	Review assumed ~18 months for planning
Combined License application	Following the SDA	Site-specific hazards, environmental review, EP, security, ITAAC

Fees: We understand from the project number assignment letter that pre-application activities included in our REP may qualify for the reduced hourly rate under Section 201 of the ADVANCE Act, as activities in support of a future application for an advanced nuclear reactor. We would appreciate the staff's confirmation of the scope.

Questions for the NRC Staff

We do not expect answers today; we would like to agree on how and when these are addressed

1	**Allocation between SDA and COL — Which departures from the certified ABWR — the containment concept, the fourth cooling-water division, platform-changed boundary conditions — should be resolved in the SDA, and which may be deferred to the COL?**
2	**The platform and the three reviews —** Is the staff comfortable with the platform being treated as a building-equivalent structure, with its marine aspects reviewed in parallel by the Coast Guard and the classification society under the 2026 MOU?
3	**Beyond-design-basis treatment of added features — Is the FOAK non-credit approach — certified analyses retained where their boundary conditions still apply, added features evaluated for no adverse interaction — acceptable as the basis for the SDA?**
4	**Emergency planning offshore — For a large LWR at an offshore site, with the extent of protective actions set by dose assessment, what path does the staff see: Part 50 Appendix E with exemptions, or the adaptable EP licensing pathways of the July 2026 proposed rule (91 FR 44560)?**
5	**Fees and sequencing —** Confirmation that the pre-application activities in our REP qualify for the Section 201 reduced rate, and the staff's preferred timing for the QA Program Description topical report relative to the first White Paper.

Thank You — End of Open Session

- Questions from NRC staff, followed by the public comment period facilitated by the NRC
- The remainder of the meeting is conducted as a closed session (information withheld under 10 CFR 2.390)

Public references
Regulatory Engagement Plan, Rev. 0 — ADAMS ML26257A291
Project number assignment letter — ADAMS ML26265A002
NRC pre-application page: nrc.gov › Pre-Application Activities › Advanced Float Co., Ltd.
Company: www.advanced-float.com

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