

Holtec's SMR-160 Small Modular Reactor, Ten Years in Development, Enters USNRC's Licensing Process

We are pleased to announce our drive to secure our SMR-160 small modular reactor design certification from the U.S. Nuclear Regulatory Commission (USNRC) on an accelerated schedule. A kickoff meeting was held with the USNRC officials and staff on September 30, 2020 wherein Holtec presented a licensing roadmap which envisages a seamless progression from Part 50 to Part 52, and a Licensing Topical Report (LTR) submittal schedule to support an accelerated availability plan for our global customers.

The first planned submittal, scheduled within a few weeks, is a Topical Report covering the essential safety features of the SMR-160 that render it intrinsically safe, namely: i) the *Passive Core Cooling System (PCCS)* and ii) the *Passive Containment Heat Removal System (PCHR)*. These systems are at the heart of the SMR-160 design that undergird its guaranteed safety under the various operational occurrences and hypothetical accidents that may afflict the plant. This submission will also demonstrate that the PCCS and PCHR comply with the General Design Criteria, an important enabler to expedite licensing efforts.

The SMR-160 PCCS, classically referred to as the Emergency Core Cooling System, is an innovative embodiment that ensures the SMR-160 plant's safety during postulated accidents. An essential aspect of the PCCS is its reliance on redundant, diverse, and passive heat removal systems.

The PCHR is an innovative system that prevents the SMR-160 containment from overheating even in the extreme case that an accidental occurrence renders power sources inoperable for an extended period of time immediately followed by an extreme environmental phenomenon, as was the case at the Fukushima Daichi plants in Japan in 2011. These innovative systems add to Holtec's extensive intellectual property portfolio, which has been the



Holtec SMR-160, a 160 MW Electric Nuclear Power Plant

catalyst behind Holtec's large body of technical contributions to the nuclear industry since the mid-1980s. Within the next decade, the SMR-160 will join the thousands of systems and components based on the Company's patents that are reliably serving the world's nuclear plants, proclaiming our credo "*A Generation Ahead By Design.*"

Holtec successfully completed the Vendor Design Review Phase 1 in Canada earlier this year and is currently planning the next step in the Canadian design approval process. The USNRC licensing process will build on these prior activities, noting the SMR-160 Safety Analysis Report, which has reached a substantial completion milestone, is developed in accordance with 10CFR50 General Design Criteria and USNRC requirements.

The SMR-160 is a small modular pressurized light-water reactor, which generates 160 MWe (525 MWth). The essential differentiator of the design is its absolute safety, which is essential to garnering public support and regulatory approval for diversified applications and distributed generation. Unlike today's operating plants, the SMR-160 is designed such that all the cooling water needed for safe shutdown of the plant, under even the most severe accident scenarios, is integral to the plant and securely located to prevent the reactor from overheating. The plant safety systems that access the SMR-160 cooling water reserve are passive, meaning they operate under the force of gravity to enable rejection of the waste heat generated from reactor operations. In short, the safety of SMR-160 is passive and intrinsic to the design.