SMR LICENSING

Pre-application topical report filed for BWRX-300

GE Hitachi Nuclear Energy (GEH) announced on January 30 that it began the licensing process for its BWRX-300 modular reactor on December 30, 2019, with its pre-application submittal of a licensing topical report to the Nuclear Regulatory Commission.

A licensing topical report could potentially be referenced in a preliminary safety analysis report by a utility customer seeking to build a new reactor. The report recently submitted by GEH describes the design requirements, acceptance criteria, and regulatory basis for the BWRX-300’s reactor pressure vessel isolation and overpressure protection design functions. GEH has requested the NRC’s review and determination of acceptability for use by June 26.

“Embarking on the U.S. licensing process is a significant milestone in the commercialization of the BWRX-300,” said Jon Ball, executive vice president of nuclear products for GEH. “As the global demand for carbon-free energy increases, we are seeing significant interest in this groundbreaking SMR technology and are excited about continuing to work toward U.S. licensing.”

GEH is also pursuing a license for the SMR in Canada and has launched a pre-licensing vendor design review with the Canadian Nuclear Safety Commission in May 2019. Canada and the United States agreed in August 2019 to collaborate on the licensing of SMRs and advanced reactors (NN, Sept. 2019, p. 7).

The BWRX-300 is billed as a 300-MWe water-cooled natural circulation SMR with passive safety systems that leverages the design and licensing basis of GEH’s ESBWR, which is rated at 1,535 MWe and was certified by the NRC in October 2014. GEH claims the BWRX-300 as the “tenth evolution” of its BWR technology. There are currently 32 GE-designed BWRs operating in the United States.

GEH and ČEZ, owner and operator of nuclear power plants in the Czech Republic, announced on February 3 the signing of a memorandum of understanding through which the companies have agreed to explore the economic and technical feasibility of constructing a BWRX-300 in the Czech Republic.

“As a company, we are focused on developing new energy solutions and technologies,” said Daniel Beneš, chairman of the board and chief executive officer of ČEZ. “We are already engaged with the development of small modular reactors, especially in our daughter company UJV Rež. The SMRs can be a significant alternative in the future that we cannot ignore. The collaboration with GE Hitachi is therefore a logical step for us.”

A memorandum of understanding to collaborate on potential BWRX-300 deployment applications with Synthos, a producer of synthetic rubber and chemicals in Poland, was announced by GEH in October 2019 (NN, Nov. 2019, p. 59).