

## British SSBNs to Receive New Reactor Cores

Trials of the U.K. Royal Navy's new Core H long-life core for nuclear submarine reactors have begun at the Vulcan Naval Reactor Test Establishment at Dounreay in Scotland. The shore test facility comprises a PWR 2 pressurized water reactor and associated turbo-generators, mimicking the plant in the Vanguard-class nuclear-powered ballistic-missile submarines (SSBNs).

The 13-year program began late last year, when Rolls-Royce Naval Marine was awarded a \$500 million contract for the Vulcan Test Operation and Maintenance (VTOM) program. The PWR 2 reactor at Dounreay was prepared for Refueling, Updating, and Revalidation (RUR) under a separate \$266 million contract, awarded in 1997.

The recipient of the first operational Core H, the nuclear-powered ballistic-missile submarine (SSBN) HMS Vanguard, has already been docked in the D154 complex at Devonport Naval Base. The new core will be retrofitted to the remaining three Vanguard-class SSBNs, and will be fitted in the new Astute-class during construction.

Dounreay originally was known as the Admiralty Reactor Test Establishment (ARTE); the Dounreay Submarine Prototype (DSMP 1) was assembled in the 1957-65 time frame. Core "A," which went critical in January 1965, was burned up by October 1967 and was followed by Cores "B" and "Z."

Core B achieved initial criticality in June 1968; it was installed in the Swiftsure-class nuclear-powered attack submarines (SSNs) and was retrofitted to the Valiant-class SSNs and the Resolution-class SSBNs. Core Z, which started testing in 1974, was installed in the Trafalgar-class SSNs.

[http://www.navyleague.org/sea\\_power/july\\_02\\_32.php](http://www.navyleague.org/sea_power/july_02_32.php)