



The Deputy Secretary of Energy
Washington, DC 20585

January 13, 2017

MEMORANDUM FOR FRANKLIN ORR
UNDER SECRETARY
FOR SCIENCE AND ENERGY

FROM: ELIZABETH SHERWOOD-RANDALL 

SUBJECT: Approval of Revised Critical Decision-1R, Alternative Selection and Cost Range, for ITER Project and Approval of Critical Decision-2/3, Performance Baseline/Start of Construction, for Subproject-1 (First Plasma) for the U.S. Contributions to the ITER Project

The revised Critical Decision (CD)-1R, Alternative Selection and Cost Range, for the ITER project, and the CD-2/3, Performance Baseline/Start of Construction, for Subproject-1 (First Plasma) for the U.S. Contributions to the ITER Project are approved.

ITER is a global partnership that was established to demonstrate the scientific and technological feasibility of generating virtually unlimited energy through the fusion of hydrogen isotopes. Now under construction in southern France, the ITER experimental fusion research device is designed to achieve and sustain self-heated – or “burning” – plasma that can produce approximately ten times more power than required for plasma heating.

The U.S. ITER Project was established to provide the U.S. share of ITER hardware and cash contributions to support ITER construction. Due to multiple cost and technical issues the original CD-1 cost range is being updated to reflect current project status and cost projections. Furthermore, two subprojects are being established to synchronize the work execution and mission need to provide ITER components and cash contributions. The two subprojects are First Plasma and Deuterium-Tritium Operations (or Post-First Plasma).

As supported by the Energy Systems Acquisition Advisory Board (ESAAB) on January 12, 2017, the revised CD-1R for the ITER project and new Subproject-1 (First Plasma) cost, schedule, scope and key performance parameters are approved as follows:

ITER Project CD-1R:

- Cost Range: \$4.7B – \$6.5B
- CD-4: 2034 – 2038

ITER Subproject-1 (First Plasma) CD-2/3:

- Total Project Cost (TPC): \$2.5B



- CD-4: December 2027

Scope: Subproject-1 (First Plasma) scope consists of the following:

- Provide the design and fabrication of the U.S. hardware needed for First Plasma
- Provide all remaining preliminary/final design effort for the U.S. post-First Plasma hardware
- Provide a defined amount of “in-kind” cash contribution to fulfill the remainder of the U.S. hardware credit obligation

Key Performance Parameters: Subproject-1 (First Plasma) criteria and key performance parameters to achieve CD-4 are:

- The delivery to and acceptance by the IO of the Subproject-1 (First Plasma) hardware
- Obtain IO acceptance/approval of the final designs for all U.S. hardware
- Payment of the “in-kind” cash contribution due to the IO

Further, the conditions set forth in Secretary Moniz’s May 2016 “Report to Congress” for continued U.S. participation in the ITER project must be fulfilled.

cc: John MacWilliams, ADS
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Stephen Meador, SC-28
Edmund Synakowski, SC-24
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