

US Fusion Power Plant Studies: Current Projects & Planned Activities

Farrokh Najmabadi

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Electronic copy: <http://aries.ucsd.edu/najmabadi/TALKS>

ARIES Web Site: <http://aries.ucsd.edu/ARIES>

Highlights of ARIES Team Activities in FY01

- ARIES-AT technical work completed in Oct. 2000
 - Aim of ARIES-AT research was to “assess impact of advanced technologies as well new physics understanding & modeling capabilities on the performance of advanced tokamak power plants.”
 - Documentation in progress. Final report is to be published in J. of Fusion Eng. & Design.
 - Nine papers, including a plenary presentation at ANS topical meeting . One paper at IAEA Fusion Energy Conference.

- ARIES Fusion Neutron Source Study completed and documented (available on ARIES Web site).
 - A compilation and assessment of the engineering and nuclear performance as well as environmental, safety and licensing implications of fusion neutron-source applications such as plutonium disposition and radioactive waste transmutation.

Highlights of ARIES Team Activities in FY01

- Most of the ARIES technical activity is focused on ARIES-IFE which was initiated in parallel to ARIES-AT in July 2000.

ARIES-IFE research Goals:

- Analyze & assess integrated and self-consistent IFE chamber concepts.
 - Understand trade-offs and identify design windows for promising concepts. *The research is **not** aimed at developing a point design.*
 - Identify existing data base and extrapolations needed for each promising concept.
 - Identify high-leverage items for R&D.
- Small effort in modernizing ARIES MFE systems code is ongoing this year.

ARIES Team Activities Plans for FY02*

- * Assumes current level of funding and ARIES Team resources is divided roughly equally between MFE and IFE studies in 2002.

- Completion of ARIES-IFE study.

- Initiation of a three-year integrated study of compact stellarators with an emphasis on innovation and evaluation of various compact stellarator configurations.
 - 2002 activity will be limited to an assessment of various compact stellarator concepts.
 - The three-year plan assumes that no IFE study will be carried out in 2003 and is under discussion at present.