

EVOLVE

Status and Evolution

(We are grabbing and shaking the system)

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SNL: R. Nygren,

FZK: L. Barleon, S. Malang,

ORNL: B. Nelson, S. Zinkle,

INEEL: K. McCarthy, B. Merrill,

UCLA: M. Abdou, N. Ghoniem, S. Sharafat,

M. Youssef,

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EVOLVE Tasks/Areas

PRESENTATIONS

- FW/blanket Configuration: Sviatoslavsky
- Blanket Lithium Boiling Analysis: Murphy
- First Wall Lithium Vaporization analysis: Barleon

SHORT COMMENTS

- Materials Evaluation: Zinkle/Wong
- W-alloy fabrication and joining: Nygren/Wong
- Safety: McCarthy/Wong
- POP Experiments: Mattas

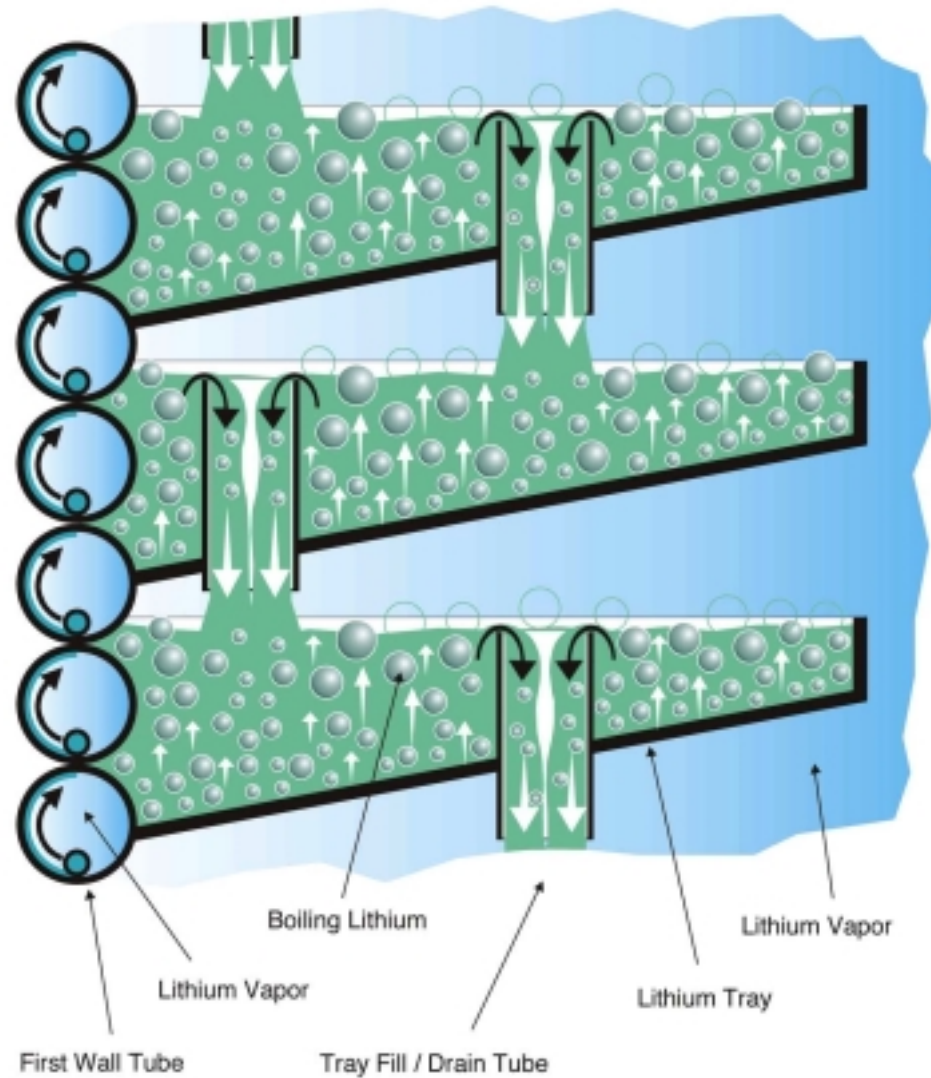
DORMANT!!!

- Neutronics
- Structural Analysis
- Tritium
- Configuration CAD
- Power conversion

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Schematic of EVOLVE First Wall Tubes and Blanket Trays



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EVOLVE SUMMARY, 1/3

- **FW/blanket Configuration:**

Separate FW/blanket structure preferred, will continue to define more details.

- **Blanket Lithium Boiling Analysis:**

Churn-turbulent flow mode established, will take a step back to review validity of various approximations.

- **First Wall Lithium Vaporization analysis:**

First order pressure drop model established, will add consideration of energy balance, review material properties, and continue to identify and address critical issues.

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EVOLVE SUMMARY, con't, 2/3

- **Materials Evaluation:**

Use temperature dependent properties of different alloys, work on the selection of the reference alloy/material for FY2000.

- **W-alloy fabrication and joining:Nygren**

Supports from Russian and SBIR programs???

- **Safety:**

Consider afterheat removal by vaporizing blanket tray Li and evaluate subsequent temperature evolution.

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EVOLVE SUMMARY, con't, 3/3

The following areas will be active when more details are defined.

- Neutronics
- POP Experiments
- Structural Analysis
- Tritium
- Configuration CAD
- Power conversion

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