# Liquid Lithium Divertor Design Meeting, 4/24/07

- ***AGENDA 4/24/07***

  Particle Flux and Recycling Analysis in NSTX - V. Soukhanovskii (LLNL)

  Lithium Chemistry in NSTX - J. R. Timberlake

- ***FUTURE MEETINGS:*** **Preliminary Agenda**

  Fast Ion Loss to NSTX Divertor Region & Implications for LLD - D. Darrow

  Particle Fluxes and Recycling in FY 2006 Lithium Evaporator Experiments
  - V. Soukhanovskii (LLNL)

  Liquid Lithium Divertor CHI Implications - R. Raman (U. Washington)

# Proposed Liquid Lithium Divertor Initial Design Goals

- Proposed Physics Design Goals for the LLD

  1) Achieve NSTX inductionless current drive density control capability in the range
     - Option 1

       $n_e$ = 3 x$10^{19}$ $m^{-3}$ at Ip = 700 kA ($n_e/n_{GW}$) ~0.4-0.5

       [from Previous 5 Yr plan, ISD scenario]
     - Option 2

       $n_e$ ~ 5 x$10^{19}$ $m^{-3}$ at Ip = 700 kA ($n_e/n_{GW}$) ~0.65-0.8

       [from more recent estimates (~15-25% decrease in $n_e$ from recent exps)]

  2) Allow for $n_e$ scan capability in H-mode (e.g.,~ x2)

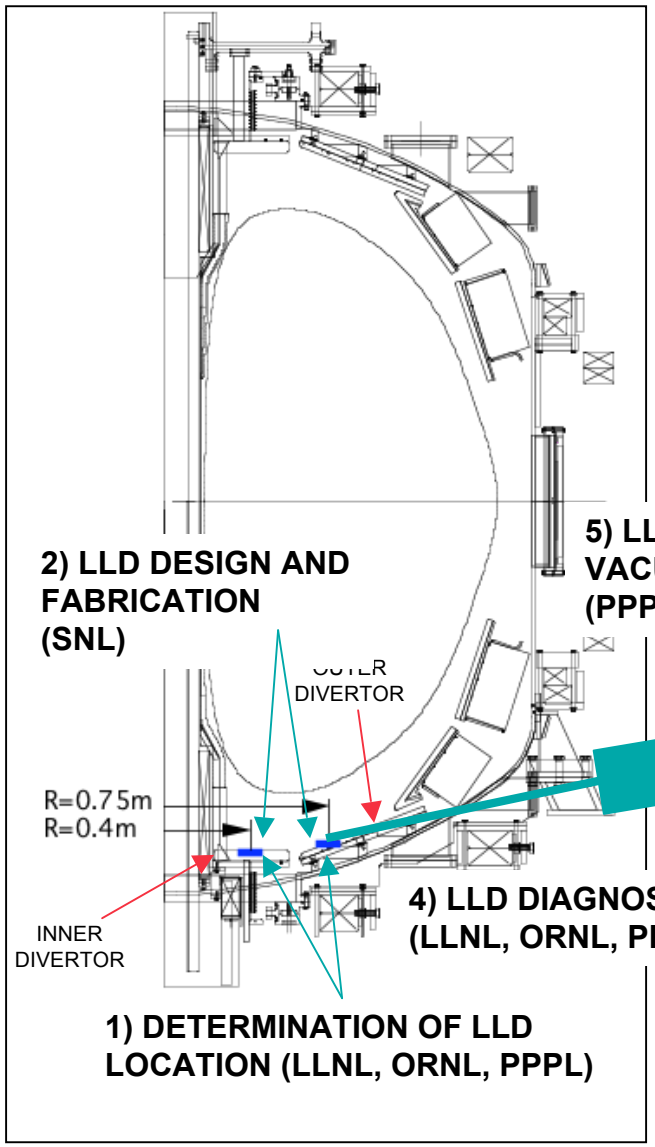
  3) Exhaust 7.5 MW NBI incident power for 2 sec (15 MJ of energy)

- Proposed Geometry Initial Design Goals for LLD

  NSTX needs to specify for SNL the following LLD parameters:

  1) Width
  2) Major Radius R
  3) Number of segments, gaps between segments, and clocking of segments ($\phi_{min}$–$\phi_{max}$)
  4) Orientation (horizontal or sloped) and nesting (on tile or on copper PP)

# Major Liquid Lithium Divertor Task Areas




HWK, 4/24/07

# Process for Arriving at the Geometry Decision

1) Identify technical constraints on the various candidate locations and geometries. (in progress)

2) Simulate particle balance and recycling physics.
(refer to talk on particle balance and recycling physics considerations, R. Maingi)

3) Analysis of available data
(refer to presentations on recycling, V. Soukhanovskii)

4) Update and review the Decision Matrix