

## Notes from the Common Question A Session:

### I. Improving the Vision for Fusion

#### *Safety*

- Develop new radioactive waste management strategy that minimizes volume and hazard

#### *Magnets*

- Reduce magnet cost by a factor of 2 and reduce magnet size

#### *Plasma Profile Control Tools for Reactors*

- Develop high power density, efficient heating and current drive systems
- Develop high velocity pellet injection systems

#### *Liquid Walls*

- Develop thick liquid walls for both MFE and IFE

#### *Solid Walls*

- Extend the capabilities of evolutionary solid wall concepts and materials

#### *Materials*

- Resolve key issues for low activation materials

#### *Tritium*

- Ensure tritium supplies for future needs

#### *Reliability, availability and maintenance*

- Increased emphasis in design studies on maintainability and reliability

#### *Plasma Facing Components*

- Develop plasma facing materials capable of  $\approx 50$  MW/m<sup>2</sup> that are reliable and have long life with low tritium retention.

### II. Continuing partnerships that enable near term fusion progress

- Develop disruption avoidance and mitigation techniques (e.g., killer pellets, coils, feedback control, ...)
- Develop tools to optimize and sustain plasma profiles
- Develop high shear strength magnet insulators capable of  $\sim 10^{10}$  Rads
- Develop high current superconducting magnets utilizing high T<sub>c</sub> materials
- Develop facilities for testing liquid walls for MFE and IFE

Overview Summary – Common Question A

- Develop targets for IFE/IRE including fabrication, injection and tracking
- Resolve key power and particle handling issues for IFE/IRE chambers
- Pursue tests of tritium breeding technology on burning plasma devices
- Develop low cost high performance quadrupole arrays for Heavy Ion drivers
- Deploy high performance plasma facing components on burning plasma devices
- Assess neutron source options and make recommendations