

Plasma Facing Components 2011 Meeting

Jeff Brooks - chairman

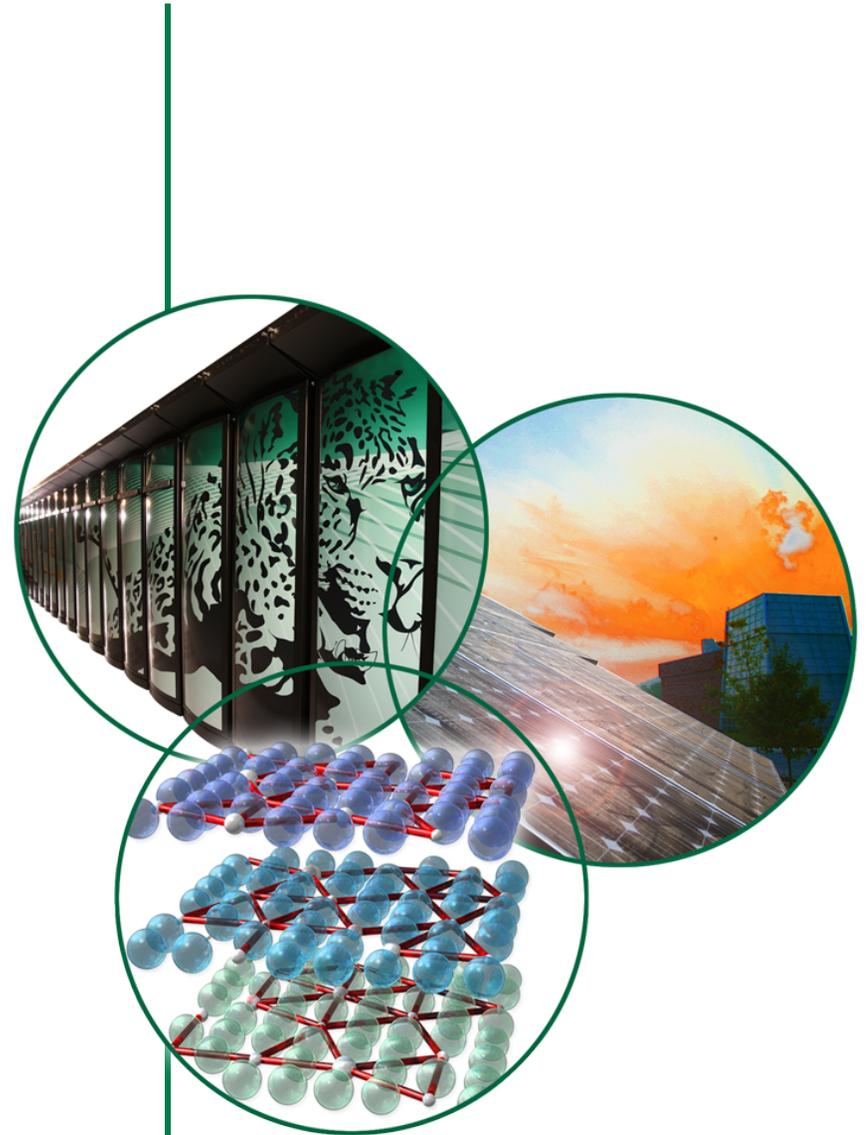
Local Organization:

Don Hillis & Ted Biewer

Fusion Energy Division

Oak Ridge National Laboratory

August 10 - 12, 2011



U.S. DEPARTMENT OF
ENERGY

 **OAK RIDGE NATIONAL LABORATORY**
MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY

Welcome to ORNL

- **Welcome to Tennessee**
 - beautiful time of the year, but can be a bit warm
- **Bus will leave each morning from hotel at 7:30 AM to take you to PFC meeting.**
- **Can drive to ORNL in personal or rental car**
- **Bus will return you back to your hotel each evening**
- **Be sure to have a picture ID, your badge, and your passport/visa each day while you attend the Workshop**
- **Meetings each day will begin at 8:30 AM**
- **Coffee, tea, pastries will be available when you arrive at Workshop each morning at 8:00 AM, in case you miss breakfast (hot breakfast can also be purchased in cafeteria)**

Plasma Facing Components 2011 Meeting

August 10 – August 12, 2011

Local Hosts:

Don Hillis - Chairman (ORNL) HillisDL@ornl.gov
cell: 865-696-7113

Ted Biewer - (ORNL) BiewerTM@ornl.gov
cell 865-308-0487

Workshop Chairman:

Jeff Brooks (Purdue) BrooksJN@purdue.edu

Logistics

- If you need to gain access to other ORNL buildings or staff, see Biewer or Hillis
- **Wireless Network Access:**
 - ornl-visitor network (follow directions on handout & prompts)
 - If you do not have a PAS badge number, use the Group Access Code: PFC11
- Lunch each day in Cafeteria downstairs (on your own)
- Reception and Banquet Wednesday night (**ORNL pays**)
 - **Flatwater Grill; 100 Melton Lake Peninsula; Oak Ridge, TN**
- **PFC Steering Committee Meeting**
 - Burchfield's at Doubletree Hotel
- **ORNL is the site of US - ITER Worksite**

PFC 2011 Meeting Website

- ORNL Workshop website for this meeting
<http://www.ornl.gov/sci/nsed/fed/PFC11/>
- All presentations will be uploaded and archived to the PFC Meeting website
- Please provide your talk to Ted Biewer in the morning of your talk **or at the latest the coffee break before your talk**

Logistics

- **Banquet: Wednesday, Flatwater Grill at the Oak Ridge Marina.**
 - Drinks at 6 PM, dinner at 6:30 PM.
 - Busses will go from the ORNL Conference Center to the Flatwater Grill, and after the banquet buses will return you to the Oak Ridge hotels.
- **Thursday evening – free time unless you are participating in steering committee meeting (Burchfield's)**
- **Friday afternoon - if you need help returning to your Oak Ridge or to the Knoxville Airport:**
 - The bus will return you back to your Oak Ridge hotel after the workshop or if there is enough interest, the bus could go directly to TYS airport. Contact Ted Biewer, biewertm@ornl.gov
 - **NO RE-ENTRY TO ORNL!**
 - If you need a taxi to airport for a special time then give your name to the Conference Secretary, Ted Biewer, or Don Hillis.

Tour of ORNL Fusion Facilities Bldg 7625

-Friday Aug. 12: 1:00 PM (~ 90 minutes)-

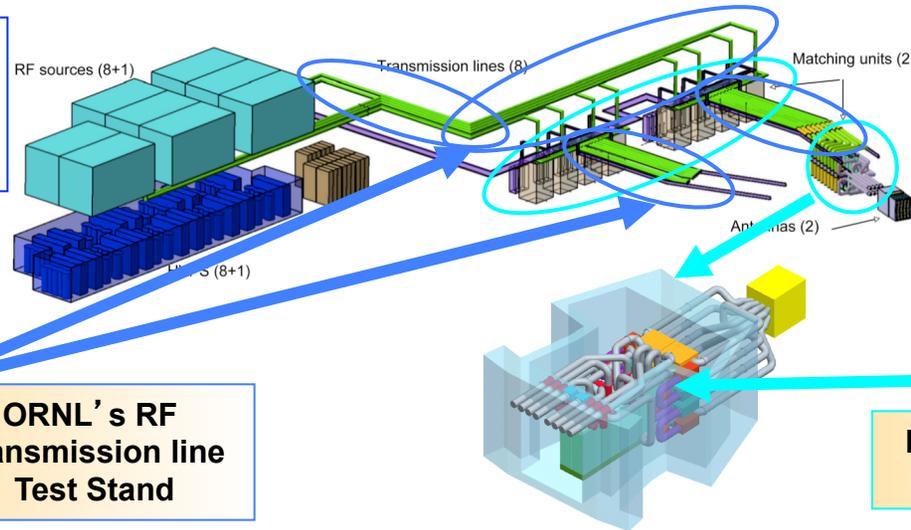
- **PFC Meeting ends Noon on Friday**
- **Lunch noon – 1:00 PM**
- **1:00 PM Bus Leave for Airport or:**
- **1:00 PM Tour of Fusion Facilities in Bldg 7625**
- **2nd Bus leave for Airport after tour at 2:30 PM**

ORNL Test facilities utilized to develop and qualify ITER ICH, ECH transmission lines

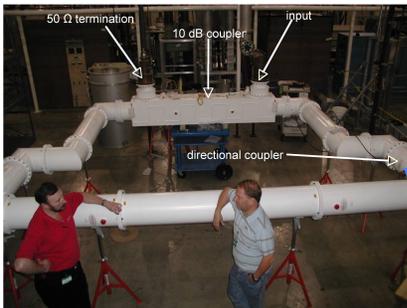


RF ICH Transmission lines

- 2.5 MW per line, 8 lines
- Water-cooled coaxial design
- 1,000 meters



RF tuners at ORNL's RF Test Facility



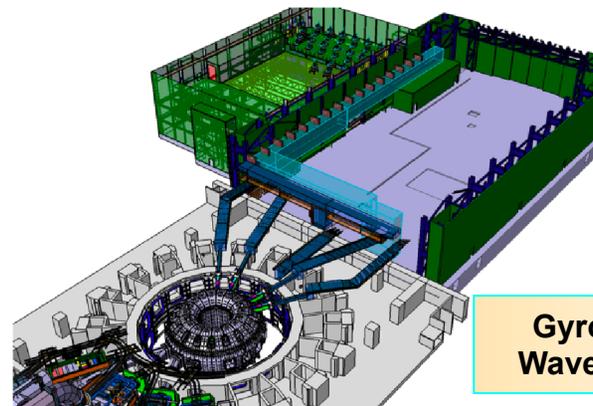
ORNL's RF transmission line Test Stand

Microwave ECH Transmission lines

- 1 MW per line, 24 lines
- Overmoded 170 GHz waveguide
- 2,000 meters



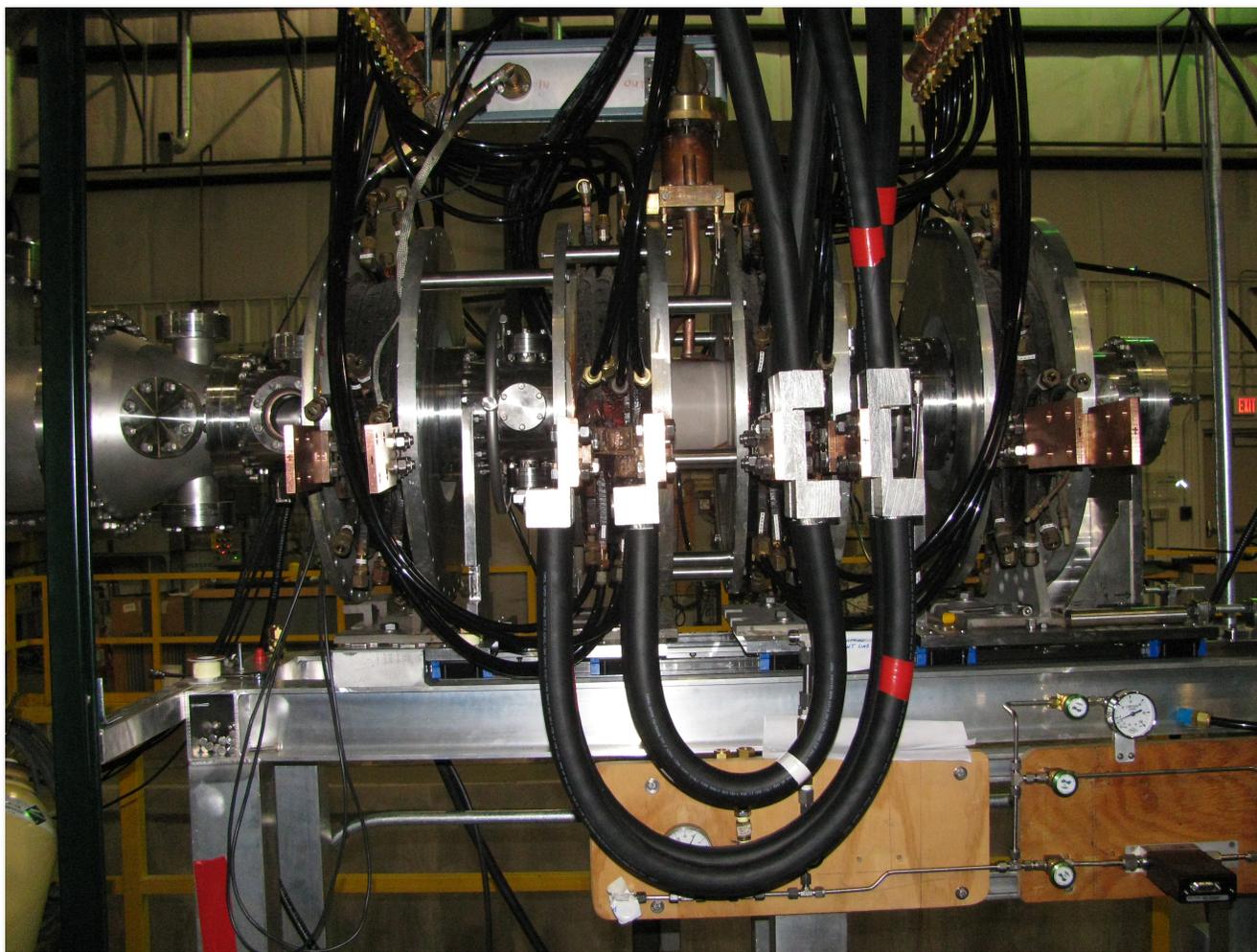
Waveguide at ORNL's 170 GHz Test Facility



Gyrotron for ORNL's Waveguide Test Facility

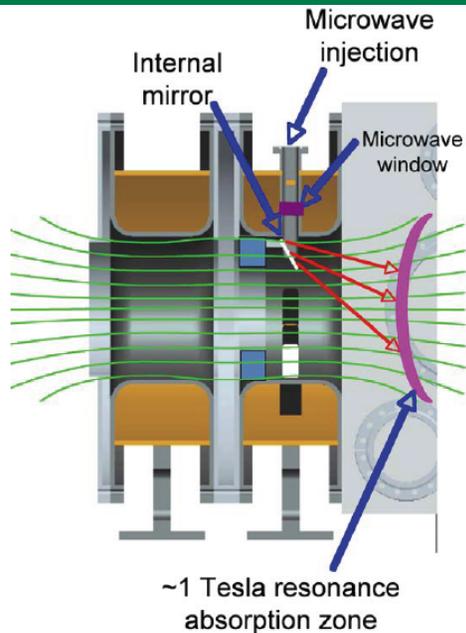


A High Field Helicon-based Plasma Source is Presently Being Developed and Tested at ORNL as a possible Plasma Material Test Stand (PMTS)

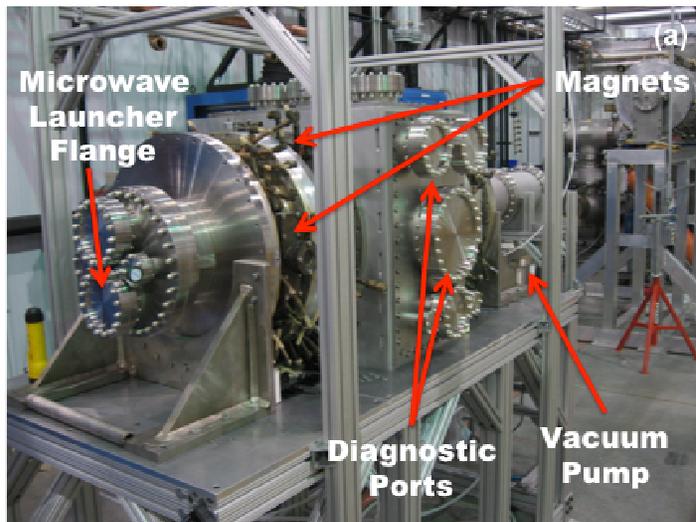
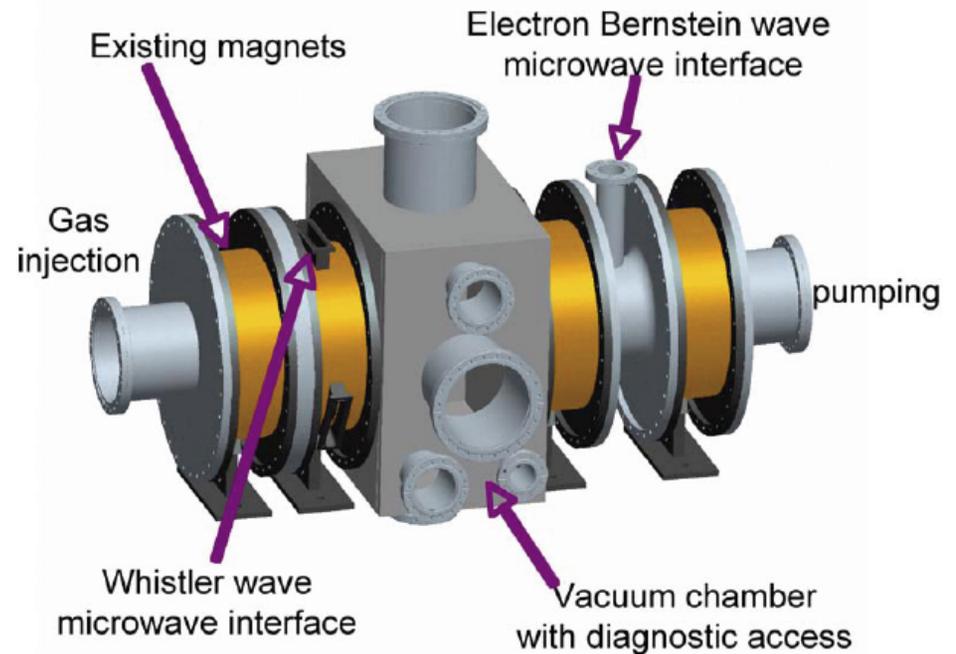


- First plasma was September 10, 2010
- Helicon Plasma Source is being developed with internal funds
- *will see on tour Friday afternoon* -

Development of EBW Heating for PMTS Prototype



200 KW 28GHz ECH



PMTS proto-type heating module is being developed at ORNL with internal funds

- will see on the tour Friday afternoon -