

## **NSTX Weekly Report (Oct. 15, 2004)**

FY2005 Planned Operations: 14 weeks  
Completed: 0 weeks producing 0 plasmas

### **Department, Project, Program (M. Ono, M. Peng, M. Williams, E. Synakowski)**

- Martin Peng (ORNL) visited the TRIAM-1M facility at the Advanced Fusion Research Center of Kyushu University, Japan, on October 4, and present a seminar on " Spherical Torus Plasma Science and Fusion Energy Development" to the fusion group there. He was invited by the National Institute for Fusion Science (NIFS) to serve on a review committee for a proposal by Kyushu University to design and build a new ST experiment utilizing the TRIAM-1M facility as a basis for a national spherical torus research program in Japan. The review committee met on October 6 at NIFS. (M. Peng)
- Martin Peng and Larry Grisham attended a Workshop on Subcritical Neutron Production, sponsored by the Eisenhower Institute, during October 11-13, 2004. Martin Peng presented a talk on "Recent Progress on NSTX Research and Implications." (M. Peng)
- R. Maingi (ORNL) presented a seminar titled "H-mode Research in NSTX" at UW-Madison on Oct. 11, 2004. The seminar was well attended and the group was impressed with the various ELM imaging diagnostics. There was particular interest in the large radial perturbation and apparent inward propagation of Type I ELMs, as well as various details of the small type V ELMs. (R. Maingi)
- The NSTX Physics meeting will be held on Monday, October 18, **2004**. **Roger Raman and David Gates** will summarize the talks and discussions at the ST Workshop recently held in Japan. The meeting will start at 1:30 pm in LSB B-318 and will be available for remote participation as usual. (S. Kaye)
- The October NSTX Team Meeting was held on Thursday, October 14, 2004. The presentation material is available on the NSTX web.

### **Engineering Operations (A. von Halle, C. Neumeyer)**

The NSTX outage continued this past week with a third trial epoxy potting of a Lexan TF flag test box as a qualification of the procedure to be used in the potting of an actual stainless steel box on Monday. Mechanical testing of this completed box and flag assembly will be performed after the epoxy is cured. Silver plating of the TF flag contact surfaces is in progress. Welding of fixtures

to the bay K port cover for the new microwave scattering diagnostic is nearing completion and preparations are underway for leak checking both the bay K and bay H port covers. In the machine shop, the high-K scattering diagnostic modifications to the in-vessel neutral beam armor has started, and the machining of the neutral beam duct to accept the new bellows continues. The installation of the Resistive Wall Mode (RWM) error field coils continues on schedule, and a final design review of the installation plans for the new Switching Power Amplifier (SPA) to power these coils was held on Friday. The mandrels for the three new plasma current Rogowski coils have been shipped to a winding contractor, and the fabrication of the new PF1a coil has begun in the PPPL coil shop.

There are no NSTX test cell access restrictions this coming week. (A. von Halle)

### **Research Operations (M. Bell)**

#### Diagnostic Operations (R. Kaita)

- Return wire assemblies have been installed in the mandrels for three replacement plasma current Rogowski coils. They have been sent to the vendor for winding the wire around the mandrels.
- A successful Final Design Review was held to evaluate modifications to the port covers in Bays G, I, and K. The purpose of the proposed changes was to improve access for the electron Bernstein wave (EBW) antenna, viewing for the visible bremsstrahlung diagnostic, and clearance for the supersonic gas injector. The addition of a window was also recommended to permit imaging of lithium pellets.

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