

PRINCETON PLASMA PHYSICS LABORATORY

WEEKLY highlights



The PPPL Highlights for the week ending October 19, 2012, are as follows:

U.S. ITER FABRICATION (D. JOHNSON):

Activity IDs were added to the U.S. Detailed Working Schedule to reflect the milestones in the CAS Tables associated with the two diagnostic procurement arrangements currently under negotiation. The completed CAS tables were sent to the IO for the ECE, TIP, and Upper Camera diagnostics and for U11, U14, and E9 port integration.

Negotiation continues on the port integration Annex Bs for the US upper ports 11 and 14 and equatorial port 9. These documents are in the process of internal IO review. Because of the large number of interfacing work elements with the integration process, many issues require negotiated resolution.

A kick-off meeting was held to draft a Task Agreement proposing to "cost-share" in the preparations for the MSE CDR, presently targeted for March-May 2013.

Doug Loesser and Tom Willard were in Cadarache discussing IO decisions on various aspects of the diagnostic first wall, that are needed to proceed as expected in the preliminary design activity.

NSTX (M. ONO):

NSTX-U is in the Upgrade Project outage in FY 2013

Some NSTX-U researchers participated in the 24th IAEA Fusion Energy Conference held in San Diego, California from October 8-13. These included PPPL scientists as well as collaborators from both on and off-site. S. Sabbagh (Columbia University) gave the NSTX overview talk entitled "Overview of Physics Results from the National Spherical Torus Experiment". There were, additionally, five oral talks: "The Dependence of H-mode Energy Confinement and Transport on Collisionality in NSTX" by S. Kaye (PPPL), "Progress in Simulating Turbulent Electron Thermal Transport in NSTX" by W. Guttenfelder (PPPL), "Disruptions in the High- β Spherical Torus NSTX" by S. Gerhardt (PPPL), "The Nearly Continuous Improvement of Discharge Characteristics and Edge Stability with Increasing Lithium Coatings in NSTX" by R. Maingi (ORNL) and "Progress on Developing the Spherical Tokamak for Fusion Applications" by J. Menard (PPPL). NSTX had 23 poster presentations by M. Ono (PPPL), R. Raman (University of Washington), Y. Ren (PPPL), D. Smith (University of Wisconsin), S. Kubota (UCLA), N. Crocker (UCLA), E. Belova (PPPL), M. Podesta (PPPL), J. Berkery (Columbia

University), E. Fredrickson (PPPL), A. Diallo (PPPL), J. Canik (ORNL), V. Soukhanovskii (LLNL), F. Scotti (PPPL), T. Gray (ORNL), M. Jaworski (PPPL), D. Battaglia (PPPL), J-W. Ahn (ORNL), R. Perkins (PPPL), J-K. Park (PPPL), E. Kolemen (PPPL), J. Myra (Lodestar), and R. Goldston (PPPL). The NSTX-U researchers contributed to two post deadline papers: “Results from Initial Snowflake Divertor Physics Studies on DIII-D” by S.L. Allen (LLNL), V.A. Soukhanovskii (LLNL) et al., and “First Observation of ELM Triggering by Injected Li Granules in EAST” by D.K. Mansfield et al.

Purdue University graduate students Sean Gonderman and Felipe Bedoya visited PPPL on October 8. They took the Materials Analysis and Particle Probe (MAPP) chamber and electronics rack back to Purdue to calibrate the diagnostics for in-situ surface analysis. The goal is to return the MAPP to PPPL at the beginning of the next calendar year for the study of samples exposed to LTX plasmas. This will also serve as a test of MAPP on an operating tokamak prior to installation on NSTX-U.

NSTX Upgrade construction activities continued this week and are highlighted in the Engineering section below.

Preparations of non-upgrade equipment for plasma operations in the NSTX-U configuration continued with the start of testing of the prototype fault detector in conjunction with the new firing generator in a field coil power conversion rectifier. Control testing is making good progress with the fault detector communicating with the firing generator, and we expect to be ready to apply primary power to the rectifier next week. Fabrication of the full set of new firing generators for the remaining rectifiers continues to make good progress.

Access to the NSTX test cell will be available only through previous arrangement with the Upgrade Work Control Center.

ITER & TOKAMAKS (R. WILSON):

DIII-D (R. Nazikian):

Randy Wilson, Joel Hosea, Raffi Nazikian and Alex Nagy attended a meeting with GA and ORNL collaborators to discuss the future of the Fast Wave program on DIII-D.

A plan to manufacture 57 integrator boards for new DIII-D magnetic sensors is progressing well. Stephen DeLuca updated schematics and printed circuit board schematics and these have been reviewed by GA engineers. Some ordered parts have been received and the balance of parts will be ordered this week. Final approval of all manufacturing drawings is expected next week, at which time procurement will commence for fabrication and assembly of a prototype set of boards.

Alcator C-Mod (R. Ellis):

Last week MSE identified a third wavelength region to use as part of the newly developed real-time polarization background subtraction system. Narrow band-pass filters on loan from JET enabled this measurement. The diagnostic neutral beam was fired with a ~1s long unmodulated

pulse into various discharges to demonstrate the use of wavelength interpolation of the polarized background using the new real-time system instead of the traditional time interpolation across a modulated beam. The results look promising for the future and analysis is ongoing.

International (L. Zakharov):

On October 4, the first thin liquid lithium flow in tokamaks was obtained on HT-7 device (ASIPP, Hefei, China). A flowing liquid lithium (FLiLi) limiter, made in PPPL under an LDRD grant (Leonid Zakharov, Charles Gentile as PIs), was installed on HT-7 in August 2012 and complemented at ASIPP with all necessary heating, Li supply/control systems, and diagnostics. The field test of FLiLi was conducted at full 1.8 T field in plasma operation. The flow was obtained in a predicted range of pressures in the Li feed system and was well controlled. With no surprise, it improved plasma discharge parameters, although this was not a primary objective of the experiments. Being scalable to other tokamaks and burning plasma operational FLiLi system opens a new page in progress in fusion by utilizing unique properties of liquid lithium.

ADVANCED PROJECTS (H. NEILSON):

Novimir Pablant reported first experimental results from the upgraded U.S. x-ray imaging crystal spectrometer (XICS) on LHD. The XICS is now fully operating at its design parameters and provides spatially resolved spectra of He-like argon from the entire plasma, whose cross-section is about 1 m high at the viewing port. Also obtained were full profiles of the ion temperature and electron temperature, evaluated from the Doppler broadening of the resonance line of Ar¹⁶⁺ and the intensity ratios of the associated dielectronic satellite lines. It is expected that the instrument's high spectral resolution may also make it possible to measure profiles of the poloidal rotation.

Chuck Kessel and Hutch Neilson participated in the 1st IAEA DEMO Programme Workshop, held October 15-18 at UCLA. Kessel made a presentation reviewing the goals and outcome of the Fusion Nuclear Science Pathways Assessment completed last year. The study identified research activities, primarily for the near term, in areas ranging from materials science and blanket engineering to plasma facing components and enabling technologies. Its focus is the preparation for a fusion nuclear science facility. Similar themes could be seen in the roadmap plans from the EU, also presented at the meeting. The meeting had presentations covering fusion development plans, blanket science, materials development, plasma exhaust, plasma material interactions, fusion nuclear science facility proposals, and safety. Neilson chaired the Technical Program Committee.

In the Wendelstein 7-X Trim Coil project, Mike Mardenfeld presented calculations for the predicted water flow through the Type B coil. These calculations will be used to update the specification and the supplier's manufacturing process for that coil. The supplier, Everson Tesla, Inc. is ready to begin winding the Type B coil once the manufacturing process outline is finalized and approved. Discussions regarding the upcoming supplier's final design review (FDR) for the power supplies were also held. The review is scheduled for November 7th at the supplier's facility; the supplier is Applied Power Systems, Inc., of Hicksville, NY.

Advanced Projects activities were represented in several papers at the 24th IAEA Fusion Energy Conference, held 8-13 October in San Diego. Aspects of the Laboratory's LDRD study of Fusion

Pilot Plants was summarized in "Progress in Developing a High-Availability Advanced Tokamak Pilot Plant," by T. Brown, *et al.* Recent work by D. Gates and L. Delgado-Aparicio was presented in a paper, "On the Origin of Tokamak Density Limit Scalings." Contributions the Wendelstein 7-X project by PPPL and other U.S. institutions were highlighted in "Technical Challenges in the Construction of the Steady-State Stellarator Wendelstein 7-X," by H.-S. Bosch of Germany's Max Planck Institute for Plasma Physics. PPPL stellarator physics collaborations were highlighted in "Non-Axisymmetric Equilibrium Reconstruction for Stellarators, Reversed Field Pinches and Tokamaks," by J. Hanson of Auburn University. Plans for international collaboration in DEMO-oriented R&D were discussed in "International Perspectives on a Path to MFE DEMO", by G. H. Neilson, *et al.*

FUSION SIMULATION PROGRAM (W. TANG):

Bill Tang was invited to the National Fusion Research Institute (NFRI) and the KSTAR Project in Daejeon, Korea to present a seminar on "Experimental Validation Challenges for Advanced Simulations in Fusion Energy Sciences" on October 15. Productive associated discussions about possible future collaborations on topics of mutual interest including the Fusion Simulation Program (FSP) were held with NFRI Director-General Myeun Kwon, KSTAR Director Jong-Gu Kwak, and NFRI Theory Head J. Y. Kim. He also presented an invited seminar at Seoul National University on "Scientific and Computational Challenges in Fusion Energy Sciences" on October 16, and was hosted on his visit there by Professor Taik-Soo Hahm.

Bill Tang presented an invited plenary talk on "Extreme Scale Computational Algorithms Challenges in Fusion Energy Sciences" on October 19 at the International Conference on High Energy Density Physics (ICHEDP) in Beijing, China and also chaired the session on Numerical Simulation of High Density Phenomena at this conference.

THEORY (A. BHATTACHARJEE):

Members of the Theory Department presented multiple posters at the IAEA Fusion Energy Conference in San Diego, California. These are: E. Belova, "Numerical Simulations of NBI-driven GAE modes in L-mode and H-mode Discharges in NSTX", A. Hakim, "Integrated Fusion Simulations of Core-Edge-Wall Thermal and Particle Transport Using the FACETS Code", S. Jardin, "Simulation of Sawteeth and other Global Macroscopic Dynamics of Tokamak Plasmas on the Transport Timescale". Jardin was also co-author of five other papers presented at the meeting. S.K. Ku, "Flux-driven Full-fGyrokinetic Study of the Nonlocal Edge-Core Ti interaction", W. W. Lee, "Steady-State Particle-In-Cell Simulations of Microturbulence in Tokamaks", "Turbulent Optimization in Stellarators & Tokamaks via Shaping", W. Wang, "Turbulence Generated Non-inductive Current and Shear Flow Driven Turbulent Transport in Tokamaks", L. Zakharov "Current Sharing Between Plasma and Walls in Tokamak Disruptions".

In addition, members of the Theory Department attended ITPA Topical Group on MHD, Disruptions and Control meeting, which was also in San Diego, California. S. Jardin gave a talk titled "Working Group 10 Report: Halo Current Modeling with TSC and DINA", and G. Fu gave a talk on "M3D-K Simulations of Beam-Driven Alfvén Modes in DIII-D".

COMPUTATIONAL PLASMA PHYSICS GROUP (S. JARDIN):

S. Ethier presented a CPPG Seminar on "What is GPU Computing". The talk addressed "GPU Computing", which aims to run scientific codes on Graphics Processing Units designed for fast rendering of complex 3D graphics on high resolution displays. While there are claims of 100X speedups in the time-to-solution over their CPU counterparts, Dr. Ethier explained under what conditions one might expect substantial speedup and when one might not. He also addressed what is involved in converting a modern HPC code that is optimized for CPU computing to GPUs.

ENGINEERING AND INFRASTRUCTURE (M. WILLIAMS):

NSTX Upgrade (R. Strykowski, E. Perry, L. Dudek, T. Stevenson):

Modification of vacuum vessel leg to vessel attachment structures to accommodate the new TF clevis blocks has been started. Engineering is still designing the modifications.

Welding of the NB2 legs to the vacuum enclosure has been completed and the centerline of NB2 has been established.

Re-installation of vessel bakeout tubing continues (relocated to avoid new TF clevis blocks).

The repairs to the JK cap (NB2 vessel nozzle) have been completed and it is ready for leak checking and installation on the vacuum vessel.

TF Conductors: Eight TF conductors have been installed into the Quadrant mold in the winding area. Preparations are underway to install the ninth conductor into the mold next week. Soldered TF conductors 119, 127 and 138 were ground and cleaned and transported to C-site MG room for temporary storage. Three of the five conductors received last week have been soldered. Five additional conductors are expected next week from Major Tool.

Coil Support Structures: Two more umbrella legs were installed on the machine. Slots for two more umbrella legs were cut into the umbrella structure.

The PF 4/5 support structures at Carolina Fabricators were completed.

NBI Upgrade: Work continues in the NTC, TTC, NBPC, and Technical Shops. HP support continues to support activities in both the NTC and TTC. A session of CAM refresher training was held this week and attended by five NBI CAMs. An ECP was prepared and reviewed for the refurbishment and controls jobs.

NBI Armor: Backing plate machining on the second plate continues as a background task in the shop. Armor tiles have been machined. T bar fabrication continues. Development of the IP for final armor installation is in progress. A list of sequenced tasks has been prepared for the Construction Schedule for in-vessel work.

NBI Relocation: Alignment of the BL to the beam midplane height and aiming trajectories

continued. Shim plates and insulator plate thicknesses have been determined for fabrication. Remedial decon of parts after the major relocations continued.

NBI Refurbishment: 90 inch flange water feed through installation continues with bending of tubing prior to installation and brazing. Effort continued on the calorimeter reassembly. The ion dump reassembly has restarted.

NBI Services: Fabrication of cryo lines continued in the NB shop. Evaluation of water system installation continues in preparation for subcontract procurement.

NBI Controls: LCC controls and wiring modifications continue on the NBPC 138 level.

NBI Duct and TVPS: The Bay JK weldment and port extension were received. Setup for leak checking these units has started. The weldments have been moved to NBPC. Duct flange fabrication continues. A TVPS valve requisition was approved. A quote was received for turbomolecular pumps and a requisition is being prepared.

Office of Project Management (T. Stevenson):

Development of the System Engineer training per procedure ENG-016 on Preventive Maintenance continues. A brief online training package similar to the COG/RLM training module is planned.

The ENG-006 SOW procedure revision for JONs and process improvements is in department review.

Several WAF reviews were held this week to support NSTXU ECPs and operations jobs.

A TCR was processed and posted on ENG-033 Design Verification to add to the Office of Project Management to the distribution list for Design Review results documentation.

An in-house EVMS surveillance self-assessment required by the PMSD has been planned and scheduled in November. Primary focus will be on the NSTX Upgrade capital project.

Electrical Engineering (A. von Halle, J. Lacenere):

The AC Power Group, in conjunction with the PPPL Training Office, conducted day-long Electrical Utilization Training on the NFPA-70E and OSHA requirements for electrical workers. Seventy-four electrical professionals attended including staff from PPPL, local industry (Bristol Myers Squibb & Johnson Controls), and electrical services groups (EMGEN & Powers Electric).

Facilities and Site Services (M. Viola)

Fire Protection: Suggested scope and contact info for a fire protection review with suggested personnel has been submitted. MS patches on all ACAMS units have been installed. ESU September fire systems PMs have been received and necessary procedure updates are being processed. A Simplex Fire Alarm technician was on site to correct problems. A notice for posting by Halon/FM-200 controls in the LSB Basement to indicate that the system is not active

was prepared. Training for people in areas with FM-200/Halon has been developed.

Telecommunications: The new phone system firmware installed on October 3 continues to rectify the problem associated with intermittent dead analog phone lines. The Telecommunications office continues to replace bad wireless phones when needed. Under the DOE federal agreement with Verizon Wireless, discounts apply for most equipment. Several new portable radios requested by PPPL staff has been purchased. The radio system is performing without issues. Quality Communications, PPPL's radio vendor, needed to replace an expensive damaged audio panel from the radio console located in the Command Center.

Steam Plant: The steam trap program has produced positive results. We are now receiving an increased amount of condensate from 84% to 92%.

Management: Facilities engineering and the energy management team are compiling the information required for the Federal Information Management System (FIMS) and has entered all required data. The GPP and OPEX lists have been updated and scoring will begin shortly.

BUSINESS OPERATIONS (E. WINKLER):

The Procurement Division submitted its semi-annual report of Davis-Bacon covered subcontract actions to DOE. DOE consolidates and reports this information to the US Department of Labor. PPPL reported 50 actions, with an aggregate dollar value of \$1.25 Million.

PPPL's Small Business Liaison Officer responded to a DOE request for information on the top three commodities that PPPL plans to purchase over the next three years, reported by North American Industrial Classification System (NAICS) code. PPPL's list included engineering services (NAICS 541330), fabricated metal products (332999) and management/consulting services (541618). These opportunities will be discussed during the upcoming Small Business Program Managers' teleconference on October 24.

DOE PSO approved revisions to the PPPL Procurement Policies and Procedures Manual (PPPM) sections for procurement closeout (PPPM 3-47) and audit assistance (PPPM 3-51). The revised sections will be posted in the online PPPM.

Ed Winkler and Tony Bleach participated in a conference call presented by the DOE-CFO's Office. The purpose of the call was for DOE to share information on the upcoming review of foreign travel cost data to be conducted by staff from the DOE CFO's Office and representatives from the contractor community. The purpose of the initiative is to improve the efficiency and effectiveness of foreign travel, and to implement best practices across the complex.

Two staff members from the Chicago Operations Office's financial staff visited PPPL and met with members of the Business Operations Department. The primary objectives of the visit was to perform a validation review of the Laboratory's FWP submission, to review pricing of selected WFO's agreements, to discuss PPPL's A-123 audit process, and to review Chapter 4 of PPPL's CAS Disclosure Statement.

ENVIRONMENT, SAFETY, HEALTH & SECURITY (J. LEVINE):

A management safety walkthrough of the NSTX Test Cell and Gallery was held on October 17. Safety conditions were found to be very good in those areas.

Samantha Burrows has joined the Safety Division to fill in for Neil Gerrish while he's away on military duty.

ESU Ambulance A-166 responded to Plainsboro for four mutual aid assignments, and to D-Site for one medical emergency. ESU Engine 66 responded to Plainsboro for one mutual aid assignment.

Site Protection staff attended a meeting on campus with Princeton University's Department of Public Safety to discuss opportunities for operational improvements and interoperability.

A teleconference was held with DOE Office of Science and Office of Health, Safety and Security to discuss the data call for the upcoming DOE Peer Review Risk Assessment of PPPL. The assessment will be conducted on October 29-November 2.

ESU Platoon B completed the Annual Physical Agility Test. This test is completed by all ESU Operations personnel while wearing full turn-out gear and self-contained breathing apparatus (SCBA). The test is a ten-station test consisting of various Fire, EMT and Security components.

President Obama ordered all flags throughout the United States of America lowered to half-staff on October 16 as a gesture of respect for the memory of former Pennsylvania Senator Arlen Specter. Please visit <http://www.whitehouse.gov/the-press-office/2012/10/15/presidential-proclamation-death-arlen-specter> to view the Presidential Proclamation.

INFORMATION TECHNOLOGY (S. BAUMGARTNER):

As part of PPPL's strategic plan to replace our business systems by FY2016, Marie Iseicz, Tony Bleach, Adam Kelley, & Steve Baumgartner met with staff from Princeton University's Office of Finance to receive an overview of the business analysis Princeton completed in determining if People Soft's Grant Processing and Project Costing modules were appropriate for Princeton's requirements and target process re-engineering. The analysis technique can be utilized by PPPL in defining a gap analysis between PPPL business functions and a selected business system package.

The installation of wiring and conduit for the outdoor wireless project has started, with the Receiving and ESU buildings completed, and the CAS/RESA building in progress.

32 processors have been added to the dawson low latency 10Gb cluster, with an additional 96 processors to be added in the next week. The dawson cluster is heavily used and experiencing excessive wait-times.

A meeting was held with NSTX management to discuss, plan, and prioritize FY13 work activities by the CODAC group. Primary activities include development of Timing & Synchronization

equipment for the post-CAMAC era, and planning en masse upgrade of diagnostics from WindowsXP to Windows7.

Walked candidate cable routes at D-Site for new fiber optic cables to support the additional networking and communications needs for NSTX-U.

Kristen Ferraro and Marc Cohen attended Service-Now administration training in NYC. Service-Now is a cloud-based application which will be used to replace our current helpdesk software and eventually provide the functionality for all IT service requests based on ITIL (Information Technology Infrastructure Library) best practices. Service-Now is currently used by LBNL and Fermi and is being implemented at BNL. A strength of the Service-Now application is that it can be used to handle requests across the enterprise, not only IT.

OFFICE OF COMMUNICATIONS: (K. MACPHERSON):

Nora Ananos prepared numerous posters and banners for PPPL science and engineering staff for the upcoming American Physical Society Division of Plasma Physics meeting. She also produced Safety posters as well as designing and producing posters announcing the upcoming All Hands Safety meeting.

Chris Cane distributed several PPPL-related stories on Twitter and Facebook, as well as posting them to the PPPL site.

Jeanne Jackson Devoe organized the following tours:

Parents of Princeton University freshmen visited the Lab over two days. PPPL hosted 66 parents and students on October 12 and 138 people on October 13, with 72 people in the first tour on Saturday at 2 p.m. and 64 people in the second tour. Parents said they were very impressed with PPPL after their visit. John DeLooper helped organize the tours and acted as the master of ceremonies at all three of the tours. Adam Cohen also pitched in to give the tours on Friday afternoon. The tours began in the auditorium and stopped in the NSTX Control Room, the NSTX Annex and the CS High Bay Area, where the tour groups viewed the NCSX coils and vacuum vessel and construction for the NSTX upgrade. The other tour guides on October 19 were Bob Kaita and Charlie Gentile. On October 20, the volunteers giving up their Saturday afternoon to give tours, in addition to John DeLooper, were: Bill Blanchard, Stewart Zweben and Henry Carnevale.

On October 16, 87 Korean science high school students visited PPPL. Al Von Halle helped organize the tours and served as the master of ceremonies. The tour started in the auditorium, and then went to the NSTX Control Room to describe NSTX operations, the Control Room Annex to discuss NSTX upgrade construction and then visited the CS High Bay Area to see the NCSX coils and vacuum vessel and the TFTR Test Cell to see the scale of a large test cell and neutral beams. The other tour guides were: Tim Stevenson, Mark Cropper and Ray Camp.

John Greenwald worked with Allen Boozer, Nikolai Gorelenkov, Yi-Min Huang and Masaaki Yamada to prepare news releases for the APS meeting. He also attended a planning session for the Princeton Alumni Weekly insert featuring PPPL that is planned for next June and that he

oversees. Also, Innovation magazine published its October/November issue that includes John's article on the PPPL nanolab. The magazine is online and 450 print copies are scheduled to arrive at the Laboratory at no charge to PPPL.

Kitta MacPherson hosted Tim Fagan, director of policy and planning for PSE&G on October 16 for a visit. Fagan was a participant in the recent Magnetic Fusion Communications Summit, hosted by PPPL at Princeton University September 12-13. She also worked with Pam Tighe, a producer at WCBS-TV in New York, to set up an interview with Charlie Gentile on smart bomb detection technologies. John DeLooper gave a tour to Tim Fagan

Elle Starkman took numerous photos, including those of: NSTX upgrade; Freshmen Parent Weekend visitors from Princeton University; MRX port opening; and two new staff members. She also provided a photo at the request of Rutgers University's AlumKnights Magazine, as well as a photos requested from Princeton University.

BEST PRACTICES & EXTERNAL AFFAIRS (J. DELOOPER):

On October 16, Science Education presented Spot awards to Dolores Stevenson and Jamie Alkhateeb for their efforts in organizing our drop test experiment to simulate microgravity conditions and to Carl Wojtkowiak for his efforts in obtaining a donation of half-coated light bulbs from Sylvania that we use in our classroom visits and workshops.

The following PPPL Reports were posted to the web:

Woltjer-Taylor State Without Taylor's Conjecture - Plasma Relaxation at all Wavelengths PPPL-4823

Authors: Hong Qin, Wandong Liu, Hong Li, and Jonathan Squire

Submitted to: Physical Review Letters (June 2012)

Dynamic Stabilization of the Ablative Rayleigh-Taylor Instability for Heavy Ion Fusion PPPL-4824

Authors: Hong Qin, Ronald C. Davidson and B. Grant Logan

Submitted to: Nuclear Instruments and Methods in Physics Research (October 2012)

The Use of DC Glow Discharges as Undergraduate Educational Tools PPPL-4825

Authors: Stephanie A. Wissel and Andrew Zwicker, Jerry Ross, and Sophia Gershman

Submitted to: American Journal of Physics (October, 2012)

PTRANSP Tests of TGLF and Predictions for ITER PPPL-4826

Authors: Robert V. Budny, Xingqiu Yuan, S. Jardin, G. Hammett, G. Staebler, J. Kinsey,

members of the ITPA Transport and Confinement Topical Group, and JET EFDA Contributors

Submitted to: IAEA Conference, San Diego, CA (October 8-13, 2012)

DIRECTOR'S OFFICE (B. SOBEL):

On October 17-18, Adam Cohen attended a meeting about integrated management in Washington, DC and had separate meetings in Germantown, MD.

On October 17, Mike Zarnstorff attended the DEMO Workshop held at UCLA.

On October 17, Dr. Alan C. Cummings, California Institute of Technology, presented a colloquium entitled "Voyager's Interstellar Mission".

On October 19, the quarterly meeting of the Laboratory Management Review was held.

This report is also available on the following web site:

<http://www-local.pppl.gov/director/highlights/2012-highlights.htm>