

### System Acceptance

#### Acceptance and verification of a Halcyon-Eclipse linear accelerator-treatment planning system without 3D water scanning

S Gao, et al. The University of Texas MD Anderson Cancer Center, Houston, TX, Accepted by JACMP, Aug 2019

- Study successfully compares IC PROFILER™ with 1D SCANNER™ vs. a 3D scanner for acceptance and commissioning.

### Patient QA: ArcCHECK® Studies

#### Clinical Evaluation of Lung SBRT for the Halcyon Platform and Dosimetric Comparison with the Truebeam STx and Millennium MLC Systems

C Kennedy, et al. University of Pennsylvania, Philadelphia, PA, SU-F-SAN4-8, AAPM 2019

- ArcCHECK used to perform patient-specific QA on lung SBRT plans.

#### Optimized Volumetric Modulated Arc Therapy (VMAT) Technique for Left Sided Breast Cancer Comprehensive Radiation Therapy Via the Halcyon Delivery System

S Goddu, et al., Washington University School of Medicine, St. Louis, MO, TU-F115-GePD-F7-4, AAPM 2019

- ArcCHECK used to validate breast plans.

#### Plan Quality and Delivery Efficiency Comparison Between Halcyon 2.0 and Tomotherapy Hi-Art

W Feng, et al., St. Barnabas Medical Center, Livingston, NJ, PO-GePV-T-207, AAPM 2019

- ArcCHECK used to validate delivery comparison.

#### Plan Quality Comparison for Cervical Carcinoma Treated with Halcyon and Trilogy Intensity Modulated Radiotherapy

C Li, et al., Department of Radiation Oncology Physics, Shandong Cancer Hospital Affiliated to Shandong University, Jinan, PO-GePV-P-89, AAPM 2019

- ArcCHECK used for validation.

#### Experience in commissioning The Halcyon linac

T Netherton, et al., University of Pennsylvania, Perelman Center for Advanced Medicine, Philadelphia, PA, Med. Phys., July 2019

- Validation of beam models at two centers using ArcCHECK, Daily QA 3, IC PROFILER, EDGE Detector and other vendors' devices.

### Patient QA: SRS MapCHECK® Studies

#### Patient SRS Plans Verification of the New O-Ring System (Halcyon™)

D Nguyen, et al, PO-GeP-T-631, AAPM 2020

- Summary: SRS MapCHECK used to validate Varian Medical Systems® Halcyon™ System 2.0
- Target volume was varied from 0.1cc, 0.5cc, 1cc and 2cc considering five different modulation levels (very low, low, Normal, Moderate and Very High)
- Mean passing rates of the global gamma were:
  - 99.48 ±0.46% for 1%/1mm;
  - 97.27±1.38% for 0.5%/0.5mm

## Commissioning and performance testing of the first prototype of AlignRT InBore™, a Halcyon™ AND Ethos™ dedicated surface guided radiation therapy platform

D Nguyen, et al, Physica Medica 80 (2020) 159–166

- Validates Varian Medical Systems® Halcyon™ System, Ethos™ Therapy, and SGRT using ArcCHECK and SRS MapCHECK

## Patient QA: SunCHECK™ Patient Accuracy

### Validation and clinical Implementation of Sun Nuclear DoseCHECK and PerFRACTION for Varian Halcyon

E. Almond, et al, Queen's Hospital - Barking Havering and Redbridge Hospitals NHS Trust, Radiotherapy, United Kingdom, PO-1398, ESTRO 2020

- Summary– Discusses importance of independent algorithm and beam models
- *"Purpose or Objective - In the UK a Radiotherapy Provider should ensure that an independent dose recalculation is carried out. This recalculation must be independent of the planning computer"*
- *"Conclusion: DoseCHECK and PerFRACTION have shown good dose distribution agreement with Eclipse TPS. The result shows that DoseCHECK and PerFRACTION are both viable systems for independent dose calculations for patients being treated on the Halcyon platform in our clinic."*

Varian Medical Systems® is a registered trademark, and Varian™, Halcyon™, and Truebeam™ are trademarks, of Varian Medical Systems, Inc. Sun Nuclear Corporation is not affiliated with or sponsored by Varian Medical Systems, Inc.



**[sunnuclear.com](http://sunnuclear.com) // +1 321 259 6862**

Corporate Headquarters: 3275 Suntree Boulevard, Melbourne, FL 32940 USA

All data used is best available at time of publication. Data is subject to change without notice. ©2020 Sun Nuclear Corporation. All Rights Reserved.