

The measured dose data using GafChromic film (MD55-2) for an HDR Ir-192 source have been shown to agree with the calculated doses from Plato treatment planning system. However, the exposure time for MD55-2 was long due to its low sensitivity. In this study we evaluate a new prototype GafChromic film, model HS, from International Specialty Products, which has double the sensitivity of model MD55-2. Four sheets of the HS films, of different sizes, were irradiated with Nucletron microSelectron-HDR V2 Ir-192 source for different exposure times. Each film was placed in contact with the Ir-192 source in a specially designed solid water phantom and was irradiated with an exposure time to deliver about 10 Gy at the farthest distance. Another set of films was exposed at about 1 cm radial distance to generate a new calibration curve. Lumisys model 150 scanning densitometer and RIT113 software was used to read the films, and IDL software for data analysis. The calibration curve of the model HS films was established. Compared to the MD55-2 film, the HS film is twice more sensitive. Hence, to produce the same optical density, the exposure time is half of that needed for the MD55-2 films for the same source activity. The 2-D dose rate distributions of the measured data were compared with the isodose curves generated using the Plato treatment planning system. Agreement within 10% is observed. Correction factors for the measurement data will be determined and incorporated if deemed appropriate.