Reply to Referee comments

Referee report: ECPD2015_090
Concept Design and Integration Aspects of ITER Vertical Neutron Camera
Luciano Bertalot, Robin. Barnsley, Natalia Casal, Jerome Ferreol, Thibaud Giacomin, Vitaly Krasilnikov, Vincent Martin, Stefan Simrock, Alejandro Suarez,Victor Udintsev, Michael Walsh, Nikolay Yukhnov et al.

Recommendation: Minor revision
General comment
The proceeding paper provides some technical information on the ITER vertical neutron cameras which are certainly of interest to the audience of the 1st ECPD.

I only have a few minor comments on the paper, as detailed below. In my opinion, the paper will be suitablefor publication in the conference proceedings after my comments are addressed by the authors.

Detailed comments
-Page 2, section 1, line 1: the word "design" has a different font type that the other words
It has been corrected

-Page 2, section 1, line 7: "others parameters" --> "other parameters"
It has been corrected

-Page 2, section 2, line 7: the meaning of the sentece "one channel spreads radially outwards plasma" is unclear
The sentence has been deleted to avoid any confusion

Page 4, section 3: As far as I know, diamonds have a very little sensitivity to gamma-rays (they are actually often proposed as candidate neutron detectors in a mixed neutron/gamma-ray field thanks to their presumed insensitivity to gamma-ray radiation). I seem to understand instead that you plan to use a gamma-ray source to estimate the active volume of the diamond detectors of the VNC system. It is not obvious to me how this could work. Could you please comment further on this point?

Operation of diamond detectors can be controlled with combined alpha, beta and gamma sources. In this case alpha and beta sources are used to provide the energy scale in the high and low ranges. Using of built-in gamma sources can be also useful. In the energy range of 100 keV-10 MeV the dominant process of gamma interaction is Compton Effect. If we use relatively thin diamond detector (typical crystal's size is 5x5x0.5 mm) it can be assumed that the scattered photon leaves the detector volume without repeated interaction and detector signal is completely defined by the ionization produced by Compton electrons. For high energy electrons only a portion of their energy is deposited in such detector's volume and goes into formation of electron-ion pairs. Typically the energy response from 14 MeV neutrons will be much higher than gamma response and can be easily discriminated.
 But if one has built-in relatively low energy gamma and beta sources (for example Cs-137 with photon energy 661,7 keV) and doesn't have plasma discharges with neutrons emission in principle one can register these photons quite well. From the response function on gamma radiation effective volume of the detector can be calculated. This technique is widely used when one works with HpGe detectors.
Of course in case of ITER one has to also take into account activation of surrounding materials.
This clarification will be reported in the paper

- Page 6, section 4.1.2., line 3: "lineally" --> "linearly"
It has been corrected

- Page 7, last line before section 5: the sentence "faster increasing data acquisition system working counting rate limit up to 5 MHz" is unclear.
It has been corrected
- Page 8, acknowledgments: the sentence "the colleagues of ITER Members of Russian Federation and for their support and collaboration" is unclear.
It has been corrected