



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Physical Science International Journal
Manuscript Number:	2015_Ms_PSIJ_23750
Title of the Manuscript:	COMPUTATIONAL STUDY OF 19.75% UO ₂ FUEL FOR THE CORE CONVERSION OF NIGERIA RESEARCH REACTOR-1 (NIRR-1) FROM HEU TO LEU
Type of Article	Original Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
<p>At the time of the first review I had hope that the authors would be more careful in reorganizing the manuscript. Unfortunately, this is not the case. The revised version is more confusing than the earlier version.</p> <p>My comments are:</p> <p>1- The parts of the (text, tables and figures) dealing with results of computational study is highly disorganized. Lack of logical sequence is evident throughout the manuscript.</p> <p>2- Figure 1 does not provide all details of the core materials. Figures 2 and 3 could be combined into one to allow easy visual analysis of the differences between LEU and HEU.</p> <p>3- The sequence of presentation of tables is not consistent with the sequence of figures. Consequently, reading the manuscript and understanding the essence of the work has become a difficult task.</p> <p>4- In several places, the text and tables have to be "moved around" in order to make sense out of the manuscript.</p> <p>5- Error analysis is missing in the results.</p> <p>6- Code systems used for obtaining results are not referenced.</p> <p>7- Since the work deals with a proposal to remodel the operating scheme of a nuclear reactor, the authors should have exercised more care in preparation of this work.</p> <p>8- The manuscript should be returned to the authors for a detailed and thorough review of the methodology and the results.</p> <p>9-Attached herewith is the revised version with comments and suggestions.</p>	<ol style="list-style-type: none"> 1. All the miss-types words in the manuscripts have been revised and each line has been corrected. 2. Figures 1, 2 and 3 illustrate the details of the cores materials for the NIRR-1 system. Figures 4 and 5 (formally figures 2 and 3) cannot be combined as a result of the wide range of H to U ratio for LEU and HEU cores. 3. Have carefully checked the manuscript and critically take note of the sequence of figures, tables and miss-types words. 4. The rest of the volume fractions in column 3 of table 3 has been computed in table 2. 5. The volume fractions in column 3 of table 4 cannot be added up to 1 since we are computing the results of the volume fractions calculated for different nuclides materials in the HEU NIRR-1 core with the control rod in. 6. The composition and geometry of core materials in LEU and HEU case are different as a result of the fuel region in the two cores not the same. The reflector region represents 100% beryllium region while the outer irradiation region was treated as 100% water zones.