Responses to review comments are provided in red

Reviewer 1: This paper would have benefited from a brief description of the Westinghouse LFR design characteristics in a separate section. Even though Figs 1 and 2 for the SAS and Gothic models allow some insights, uniqueness of this design with the micro-channel heat exchangers embedded in the primary pool (eliminating the intermediate loop), water-filled reactor cavity for decay heat removal, and passive plant protection system require further elaboration to make better sense of the results presented in Chapter 3. Perhaps the presenter should consider its inclusion in his presentation. (The details of the design are available in reference [1]. Details of the design will be included in the presentation)

Reviewer 2: The paper provides the results safety analysis (selected transients) of Westinghouse LFR using coupled SAS4A/SASSYS-1 and GOTHIC codes. The results of presented analysis demonstrate a passive response of the reactor to the postulated accidents. I recommend accepting the paper, after the review comments below are addressed.  
- In Introduction, last paragraph, "normal decay heat removal system" is mentioned, without any description. Please define what this system is. (Description of the normal decay heat removal system is added to the text)  
- Also, this sentence states that ALL active systems are assumed to be unavailable. This contradicts with the assumption that "makeup water system is operational for 7 days" (unless it is a passive system). Please clarify. (The extra water in the safety pool comprises the makeup water system, a passive system. The explanation is added to the text)  
- Provide a reference (or description) for GOTHIC code (The description of GOTHIC code is provided)  
- Explain in more details how the two codes are coupled. "Inter-process communication" is not clear. Is it on a source-code level, with information exchange between the two codes? Through input/output files? On each time step? (Detailed description of the inter-process communication is provided)  
- Is radiation included in RV-GV gap? (Thermal radiation is the primary heat transfer mode between RV and GV; the explanation is added to the text)  
- Provide rational for selecting EOC for SBO and BOC for TOP.(The rational for choosing EOC for SBO but BOC for TOP is provided)  
- Provide description of "passive shutdown system". (The passive shutdown system is not designed yet but is assumed to be actuated by the hot pool temperature in this analysis. The explanation is added to the text)  
- For Figs 4 and14 - are those peak or average temperatures? If peak, how these are calculated (by assembly, by pins, etc.)? (They are peak temperatures in the hot channel. It is clarified in the figure caption)  
- For results in Fig 9: is axial conduction included in RV and GV? In the "uncovered RV section", how RV temperature is calculated: is there HT with cover gas? If so, then it's not clear why GV temperatures in this section are that much lower (with air circulation), as cover gas would be at about the same temperature as the coolant. (In the SAS model, the uncovered section of RV wall is not represented (i.e., adiabatic) and hence the adjacent section of GV wall does not receive any heat from RV. Instead, it is exposed to the circulating air and its temperature approaches the air temperature. The explanation is added to the text)  
- Fig 9 is missing vertical axis title and units (The missing axis label is provided)  
- Why normal decay heat removal system is unavailable in TOP? (The normal decay heat removal system is not credited because it is not safety-related. The explanation is added in the text)  
- For Fig 14 statements on fuel melting and cladding failure, provide the limits, with references. (The limits are provided with references)  
- There are repeating sentences at the end of Conclusion.(The duplicate phrase is removed)

Reviewer 3: The paper is focused on the SBO and TOP safety analysis of the Westinghouse LFR performed with SAS system code coupled with GOTHIC containment code.  
The paper is of high quality and worth to be published, after the minor improvements already listed by Reviewer 2, with particular attention to:  
- Description of the kind of coupling between SAS and GOTHIC (Detailed description of the code coupling is provided)  
- The rationale behind the choose of BOC conditions for TOP accident (The rational is provided in the text)  
I would like also to suggest an aesthetic revision of the graphs that should be a bit smaller with higher character size.(Characters in axis labels and legend are enlarged)